

# WOODY BIOMASS

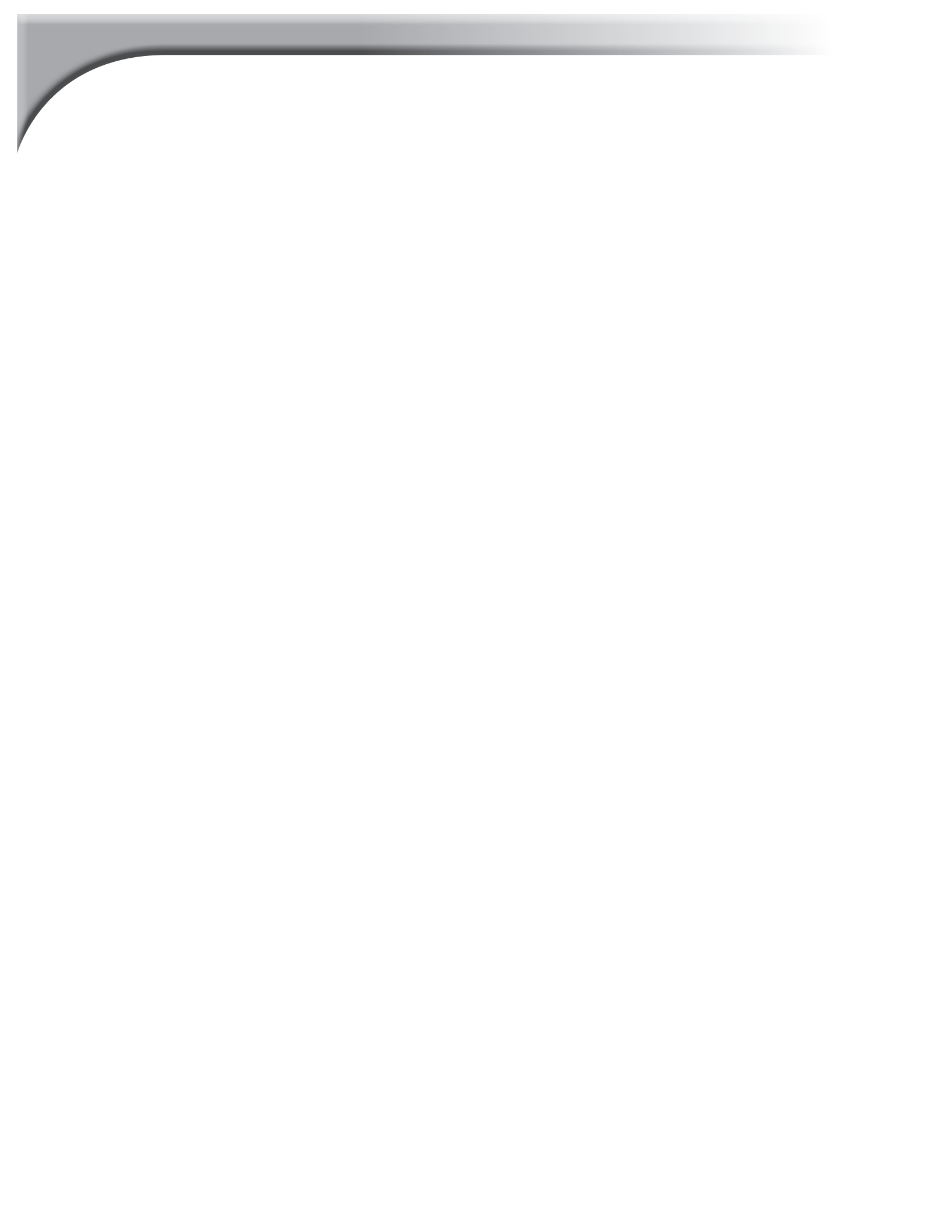
## DESK GUIDE & TOOLKIT

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## FOREWORD

Since 2002, the National Association of Conservation Districts (NACD) has been working in partnership with the Department of the Interior and the U.S. Forest Service in helping to implement the National Fire Plan and related efforts to help reduce hazardous fuels through increased utilization of woody biomass.

Over the years we have published several booklets regarding the role of conservation districts in implementing the National Fire Plan. Since the publication of these documents many conservation districts have become more actively involved in fire prevention and rehabilitation activities in their communities.

NACD, at the encouragement of our Department of the Interior and U.S. Forest Service partners, has embarked in an effort to develop a set of three new desk guides and “toolkits” for use by the nation’s conservation districts in assisting their communities with increasing concerns over forest health, energy, and local economies. In short, the topics for these three new desk guides involve woody biomass utilization; community wildfire mitigation; and handling woody debris after major disasters.

This “Woody Biomass Desk Guide and Toolkit” is the first in the series and is designed to serve as an easy to use “how-to” handbook for conservation district leaders in working with their communities. It is also readily applicable for use by county extension agents and leaders of Rural Conservation and Development Districts as well as other community-based organizations. The primary focus of this Desk Guide and Toolkit is the utilization of woody biomass as an energy feedstock. However, other potential uses and opportunities can be found in the ensuing pages.



Please use this Desk Guide to motivate and educate your community on the many opportunities associated with utilizing woody biomass to enhance the environment while, at the same time, developing creative solutions to address energy needs and stimulating local economies.

Charles Holmes, Chair  
NACD Forestry Resources Planning Group



## ACKNOWLEDGEMENTS

The need for educating landowners, local leaders, and the public about woody biomass production and utilization for renewable energy and other biobased products is becoming increasingly important. The various advantages, disadvantages, challenges, and opportunities of woody biomass must be considered when evaluating its potential as a resource. We hope that this Woody Biomass Desk Guide and Toolkit will help assist agencies and individuals who work to increase awareness about biomass utilization and empower landowner, community, and industry decision making. We are grateful to the team of talented and dedicated people who helped write, review, edit, and design the content for this guide. Their contributions are greatly appreciated. We specifically would like to thank the following individuals:

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# INTRODUCTION

## Purpose Of The Desk Guide And Toolkit

Communities today are challenged to develop effective strategies that support forest ecosystem health, mitigate the effects of climate change, satisfy growing energy needs, and provide local economic opportunities. For some communities, woody biomass may be a viable option for meeting these needs and deserves serious consideration. Forests in the United States represent an important potential energy and biobased product resource. The National Association of Conservation Districts (NACD), in collaboration with federal, state, and local partners is working to raise awareness about the potential for woody biomass as a primary feedstock for such products.

This Woody Biomass Desk Guide and Toolkit provides an overview of woody biomass production and utilization in the U.S., tips of how to provide effective outreach for your clientele, and educational handouts to share with your audiences. The purpose of this guide is to equip natural resource professionals and outreach specialists with the information and tools needed to increase awareness of the use of woody biomass for energy in the U.S. All of the materials in the guide are available at:

<http://nacdnet.org/resources/guides/biomass/>

## Who Should Use the Woody Biomass Desk Guide and Toolkit?

This Guide is designed for use by conservation district, Resource Conservation & Development and Extension professionals throughout the U.S. It also contains handouts and other resources to assist in educating respective audience.

## Using the Desk Guide and Toolkit

The Woody Biomass Desk Guide and Toolkit is a comprehensive guide comprised of reference sections, handouts, case studies, an introductory PowerPoint presentation, Frequently Asked Questions, a glossary, and additional resources. Here, each of these sections is explained in greater detail.

### *Reference Sections*

The Woody Biomass Desk Guide and Toolkit consists of eight chapters. Each of the first seven chapters, contains a reference section, which provides background and overview information for natural resource professionals and outreach specialists. In textbook format, the reference sections are designed to increase understanding of the basic concepts for producing and using

woody biomass for energy, transportation fuels, and other bioproducts. Additionally, the reference sections serve as a quick reference guides to answer questions from clients or the public about the production and utilization of woody biomass.

### *Handouts*

In addition to the reference sections, most of the chapters also contain handouts. These outline important points, strategies, and information that may be useful for landowners, the public, local leaders, or other audiences.

### *Case Studies*

Chapter 8 of the Guide is a compilation of case studies. Sometimes new concepts are easier to explain with examples. As such, these case studies provide examples of both the challenges and successes of existing or planned woody biomass production and utilization projects throughout the U.S. Case studies highlight relevant points found throughout the Guide and Toolkit and may be used as background reading or outreach handouts.

### *PowerPoint Presentation*

The Microsoft PowerPoint® presentation included with this Guide provides a detailed introduction designed for an audience interested in learning more about woody biomass production and utilization. You can simplify this presentation or modify it to address the particular topic area you need to cover or for the particular audience or geographic location you are addressing.

### *Frequently Asked Questions*

Towards the end of this guide is a set of frequently asked questions with answers (appendix A). These questions were collected during a series of community forums conducted by the University of Florida, and the answers were provided by experts in the wood-to-energy field. The FAQs provide insight into the concerns and misconceptions that the public has about using wood for energy. This resource may help you prepare to answer similar questions from your audiences. Additional questions from the U.S. Department of Energy, Biomass Programs website are also included in the list.

### *Glossary*

A glossary of terms related to woody biomass production and utilization (appendix B) labeled is provided at the end of this guide to familiarize you with relevant terms.

### *Resources*

A bibliography of books, articles, Web sites, programs, and other tools pertaining to woody biomass production and utilization is included in appendix C. These resources can help you expand your library and knowledge

about woody biomass and may also be used to supplement the handouts for outreach activities.

## **Desk Guide and Toolkit Chapter Topics**

### **Chapter 1– *Setting the Stage***

This chapter introduces the environmental, energy, economic, and social issues that are shaping the potential for woody biomass as an alternative to fossil fuels.

### **Chapter 2 – *What is Biomass?***

Chapter 2 provides a general overview of biomass types and sources and more comprehensive information on woody biomass, specifically.

### **Chapter 3 – *Products and Possibilities***

Electricity and ethanol are just two possible products that can be produced from woody biomass. This chapter introduces the major processes—thermochemical, biochemical, and chemical—used to convert woody biomass into products such as heat, biodiesel, char, specialty chemicals, and more.

### **Chapter 4 – *Implications of Producing and Using Woody Biomass***

This chapter explores, in detail, the environmental, economic, and social implications (costs and benefits) of producing and using woody biomass for bioenergy and other biobased products.

### **Chapter 5 – *Incentives to Produce and Use Woody Biomass***

Chapter 5 outlines many of the policies and incentives that exist nationally and at the state and local levels which influence woody biomass production and utilization. Becoming familiar with these policies and incentives can help you better assist and advise your clients or audience.

### **Chapter 6 – *Do-It-Yourself Supply Curve: Tools to Help You Get Involved in an Entrepreneurial Biomass Project***

The feasibility of woody biomass utilization projects depends, to a significant extent, on the cost and availability of wood resources. One way to illustrate the economic availability of the biomass resources is with supply curves. This chapter introduces several tools that you can use to construct supply curves for woody biomass resources in a particular area. These tools may be useful to potential suppliers and users of biomass or to communities considering using biomass.

### **Chapter 7 – *Outreach and Education***

Chapter 7 provides tips and tools for engaging in effective woody biomass outreach activities. Whether you are designing a community-wide outreach program or giving a brief slide presentation on woody biomass, this chapter may be helpful.

## Chapter 8 – *Case Studies*

As previously mentioned, case studies can be an excellent resource to increase understanding, provide insight, and make concepts like woody biomass more conceivable. There are many woody biomass production and utilization projects underway throughout the U.S. This chapter provides several examples of woody biomass use for a variety of locations, scales, and applications that can be used for background reading or handouts for your audiences.

### **Strategies for Using the Resources**

You can pick and choose from the materials in this Guide and Toolkit to create the outreach strategy or program that best meets your objectives. Whether you need to give a thirty-minute presentation to your local county commission or conduct a week-long professional development training for consulting foresters, the resources in this program can help. See chapter 7 for specific ideas on how you can use the resources in this program to provide effective outreach to your target audience.

#### *A Special Note*

This Woody Biomass Desk Guide and Toolkit was adapted from two programs: The Sustainable Forest Management for Bioenergy and Biobased Products Trainer's Curriculum Notebook ( <http://www.forestbioenergy.net>) and the Wood to Energy Biomass Ambassador Guide ( <http://www.interfacesouth.org/woodybiomass>). Both of these programs contain a variety of information for those working with the public, landowners, community leaders, and other audiences about woody biomass. Both programs are focused on the southern U.S. and include varying degrees of technical information.