

## Section Three

# NON-MARKET VALUATION

Thomas P. Holmes

*USDA Forest Service*

In addition to commodities such as timber, forest ecosystems provide an array of goods and services that are not priced in markets but maintain, to a large degree, the characteristics of public goods (non-rivalry and non-excludability). Markets do not recognize scarcity of non-market resources and cannot be relied upon to allocate these resources to their highest and best use. In addition, the production of commodities can diminish the non-market values of forests by more than the gain in commodity benefits, leading to losses in social welfare. Non-market valuation methods, as illustrated in this section, have been developed and applied to address these problems of sub-optimal resource allocation.

The first two chapters in this section (17 and 18) discuss stated preference methods, which are able to quantify both use and non-use values related to both current forest conditions and conditions that could exist in the future. The next two chapters present revealed preference methods, illustrating non-market valuation of forest resources first from the perspective of the recreation consumer (chapter 19) and second from the perspective of the downstream agricultural producer (chapter 20). The four non-market valuation methods discussed in the chapters are illustrated with econometric analyses of survey data to estimate values of non-market goods and services from public forests in North Carolina, Maine, Brazil, and Indonesia.