

**National Report
To the Fifth Session of the
United Nations Forum on Forests**

United States of America



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Table of Contents

Page No

I.	<u>Key Contacts</u>	1
II.	Progress and issues related to implementation of the IPF/IFF Proposals for Action
	<u>General</u>	
	<u>Implementation of the IPF/IFF proposals for action related to thematic issues of UNFF 2</u>	
	<u>Implementation of the IPF/IFF proposals for action related to thematic issues of UNFF 3</u>	
	<u>Implementation of the IPF/IFF proposals for action related to thematic issues of UNFF 4</u>	
III.	<u>Preparation of the Report</u>	

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II. Progress and issues related to implementation of IPF/IFF proposals for action

General

UNFF Guidelines:

1. Please provide additional or new information on initiatives taken or lessons learned since 1997 further to the information on forests included in your national reports to UNFF 2, UNFF 3 and UNFF 4, the Commission on Sustainable Development, and other international instruments and organizations on the following points:

- *assessment (including of the relevance, priority, status of implementation, planned actions) of the IPF/IFF proposals for action in the national context*
- *development and implementation of your national forest programme or similar national policy framework for forests,*
- *international cooperation, including development and implementation of partnerships, mechanisms or initiatives to facilitate stakeholder participation, including indigenous and local communities, in forest sector planning, decision-making and/or forest management.*

Lessons Learned

During the course of the five-year UNFF Program of Work, and the preparation of its reports for the annual sessions, the US has learned a number of important lessons about its forests, the people and organizations that influence their management, and the interests of a broad array of individuals and communities who have a stake in their conservation and sustainable use. Many of these lessons have emerged from Americans seeing their own forests in a new light, in context with other developed and developing nations that are each striving in their own way toward the goal of sustainable forest management.

- The UNFF process has given the US important new opportunities to critically evaluate its own policies, programs and activities that further the Proposals for Action, and to consider these in a global context rather than in isolation.
- Convergence around a few generally accepted principles of sustainable forest management, such as the C&I, has created new opportunities for a range and diversity of forest interests to reach consensus on current forest conditions and trends, and begin a more factual and productive dialogue regarding potential future actions and priorities.
- Nevertheless, the primary value of this analysis and the US reports presented to UNFF has been to provide forest resource managers, policymakers, and concerned citizens in the US itself with a comprehensive look at the current management of our forests—both public and private—and identify specific needs and opportunities for improving management in the near term, and achieving sustainability in the long term.
- We have heightened recognition of the value of a strong institutional, legal, and policy framework to guide government, partners, and citizens in promoting sustainable forestry. Leadership by individuals and agencies of central government is important, but the creativity and energy of the private sector and NGOs are also critical. An appropriate framework should establish broad goals and criteria but be flexible enough to allow participation by all these groups and adaptable enough to respond to changes and new challenges over the long term.

- Secure land tenure and strong legal protections for private property rights are essential first steps to attracting and stimulating private investments of labor and capital in forest land, and thus creating a reliable basis for long-term forest stewardship.
- A popularly-supported system of public forest lands is essential to protect important environmental values and ecosystem services vital to the public interest, especially where resource values are too low to warrant private investment in long-term management, and there is a high likelihood of conversion to non-forest land uses in which these amenity values would be lost.
- The US has much to learn from developing countries around the world in terms of community-based forest management, utilization of traditional ecological knowledge, and support for indigenous peoples striving to maintain or create sustainable societies and local economies.
- Much of what developing countries can learn from the US is not so much what we have been doing since 1997, but what we did a century ago in terms of land allocations, designations, and the development of professional forestry institutions as we ourselves made the transition from a developing nation exploiting its natural wealth, to a developed country utilizing its natural resources sustainably.
- Significant opportunities exist for the US to encourage and support sustainable forest management practices in countries exporting wood to the US, without resorting to subsidies, tariffs or non-tariff trade barriers as defined by the World Trade Organization.
- Significant opportunities remain to meet a greater share of US demand for wood and wood fiber from US forests, and at the same time protect areas with locally, regionally or globally significant biological diversity resources, through cooperative efforts involving government, forest industry and conservation NGOs.

New initiatives

This report summarizes the information on initiatives taken by the United States since 1997 that implement the IPF/IFF Proposals for Action. Additional information can be found in each of the preliminary US national reports to the second, third and fourth sessions of the UN Forum of Forests (<http://www.un.org/esa/forests/reports.html>).

The US would like to bring particular attention to a few key initiatives taken since 1997:

- Establishing a national round table of federal, state, tribal, environmental and business interests (the Roundtable on Sustainable Forests), which has significantly improved opportunity for dialogue, information exchange, forest monitoring, assessment and reporting, and coordinated action on the ground.
- Developing the first *National Report on Sustainable Forests*,¹ utilizing the Montreal Process Criteria & Indicators as the framework for assessing current conditions and trends in US forests. The report was developed cooperatively by a diverse group of US organizations, the

¹ USDA Forest Service. 2004. National Report on Sustainable Forests-2003 FS-766. Washington, DC: US Department of Agriculture.

Roundtable on Sustainable Forests, which includes federal, state and tribal government, forest industry and NGOs.

- Establishing the “Healthy Forest Initiative” supported by the Healthy Forest Restoration Act (2003), which promotes and funds cooperative efforts among federal agencies, state governors, tribal officials and private land owners , with more than \$1 billion in new funds at the national level to address challenges to forest health.
- Developing “Principles and Guides for a Well Managed Forest” to help state forestry agencies, forest landowners and other interested members of the public determine what types of planning, assessment and/or implementation actions they can take to achieve sustainable forest management. (Reference: <http://www.stateforesters.org/positions/P&G2003.htm>)
- Development of an *Assessment of Forest and Range Lands*,² evaluating the current and expected supply and demand of forest and range resources 2000-2050. This is accompanied by a more specific assessment of timber resources,³ and a strategic plan⁴ for investments in forests and range lands aimed at meeting projected demand while managing these resources sustainably.
- A comprehensive non-governmental evaluation of conditions in forests and other major ecosystems in the US, with a critical assessment of the capacity of US organizations—government, industry, and non-governmental—to reliably collect, analyze and interpret information essential to periodic assessments.⁵
- With the involvement of a broad range of stakeholders, assessment of current arrangements for sustainable forestry in the U.S. within the context of the IPF/IFF Proposals for Action.

Examples of international initiatives include:

- Launched at the WSSD (September 2002) the Congo Basin Forest Partnership (CBFP) – a unique public-private partnership bringing together over 30 government and non-government partners committed to the shared goal of sustainable forest management, economic development and improved local governance in six Central African countries (Cameroon, Central African Republic, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Republic of Congo). The US has committed \$53 million to this vital effort; other partners are also making new financial contributions. This represents a major infusion of funds into the region, which contains the world's the second largest intact tropical forest. A 2004 survey indicates that some \$300 million has been directed to forest related activities in the region, over the last decade.
- Under the Tropical Forest Conservation Act, we are providing new and innovative opportunities for interested qualifying developing countries to reduce their debt to the US

² USDA Forest Service. 2001. RPA Assessment of Forest and Range Lands-2000. FS-687. Washington, DC: US Department of Agriculture.

³ Haynes, R. 2003. An Analysis of the Timber Situation in the United States, 1952-2050. General Technical Report PNW-GTR-560. Washington, DC: US Department of Agriculture.

⁴ USDA Forest Service. 2000. Integrity and Accountability: A Framework for Natural Resource Management. USDA Forest Service Strategic Plan (2000 Revision). FS-682. Washington, DC: US Department of Agriculture.

⁵ Heinz (J.) Center for Science, Economics and the Environment. 2002. The State of the Nation's Ecosystems: Measuring the Land, Waters, and Living Resources of the United States. New York: Cambridge University Press.

while generating funds for local tropical forest conservation. Agreements have been concluded with Peru, Panama, El Salvador, Belize, the Philippines and Bangladesh, which will generate \$50 million in new funds for in-country forest conservation activities. Three additional agreements are in progress.

- Launched a new Presidential initiative to help interested developing countries combat illegal logging and the sale and export of illegally harvested timber products. The initiative generated some \$15 million in new actions in 2003, which will build the foundation for further action with partner countries and stakeholders in 2004 and beyond.
- Committed an initial \$4 million to a comprehensive post-conflict evaluation and reform and rehabilitate the forest sector in Liberia, working closely with the transitional government, NGOs, private sector, civil society and international organizations. This will provide the basis for implementing relevant IPF/IFF PfAs and UNFF actions, as well as an unprecedented opportunity to put Liberian forests on a sustainable forest management basis.
- Actively facilitated the explicit inclusion of sustainable forest management as a basic component of the GEF's new operational program on "sustainable land management" (OP 15). As a result, activities eligible for funding under the new GEF focal area include improvement of forest health, controlling damaging invasive alien species, strengthening forest inventory, monitoring and assessment, and sustainable harvesting practices. The level of financing for forests currently available through existing GEF focal areas on biodiversity and climate change could increase significantly through the new focal area - if governments submit projects to promote sustainable forest management (in addition to forest protection or carbon sequestration).
- Funded (with Japan) an International Tropical Timber Organization Workshop in Pucallpa, Peru on Capacity Building for Implementation of CITES Appendix II Listing of Mahogany that brought together industry exporters, importers, governments, academics and NGOs to identify best practices for the sustainable management of the high-value forest species throughout the range states.
- Co-sponsored with Brazil, China, Italy, Japan, South Africa, Sweden, Turkey and the United Kingdom, the international experts meeting on "Lessons Learned in Monitoring, Assessment and Reporting on Implementation of the IPF/IFF Proposals for Action." The purpose of the March 2003 meeting, hosted by Italy and supported by FAO and the UNFF secretariat, was to share lessons learned by countries and identify how the UNFF can access and use national information to facilitate further implementation of the PfAs. The meeting brought together 100 participants from 51 countries, produced the "Viterbo Report" setting forth concrete conclusions and
- Launched the Global Conservation Program (GCP), a centrally-funded partnership between USAID and six leading conservation organizations that has achieved results in protecting forests with globally significant areas of biodiversity. The GCP promotes innovative programs founded on a "threats-based" approach that are sustainable, focused and adaptive. Conservation partners in this program are the African Wildlife Foundation, Conservation International, EnterpriseWorks Worldwide, the Nature Conservancy, the Wildlife Conservation Society and the World Wildlife Fund. The GCP addresses forest biodiversity hotspots in 15 countries across three continents.

Implementation of the IPF/IFF proposals for action related to thematic issues of UNFF 2

UNFF Guidelines:

Please provide information on: activities undertaken since 1997, progress made, constraints encountered, lessons learned, and issues that have emerged, as well as relevant information related to means of implementation (financing, transfer of environmentally sound technologies, and capacity-building) related to the following elements:

Combating deforestation and forest degradation

- 2. preparing diagnostic studies to analyse historical and underlying causes of deforestation and forest degradation, including processes outside the forest sector*
- 3. formulating and implementing national policies and strategies, through an open and participatory process, for addressing the underlying causes of deforestation*
- 4. raising awareness of the importance of issues related to deforestation and forest degradation and the multiple values of forests*

Deforestation

Deforestation in the U.S. takes a different form than that which most commonly comes to mind for less developed countries. In the U.S., the concern is for loss of forest area to development, and the driving force is not poverty, but affluence.

In the mid-20th century, the increasing awareness of the potential negative ecological impacts of human activities ushered in a period of growing controversy in forestry. Some segments of society focused increasingly on the negative ecological impacts of timber harvesting on other resource values, while other segments of society became increasingly concerned that ecological and environmental constraints were making it difficult to maintain existing timber harvest levels. The result was prolonged and rancorous debates over forest management practices, many of which ultimately had to be settled through the courts or legislation restricting forestry.

The greatest changes in forestry in the U.S. came about in the late 20th century, in the context of biodiversity conservation, and especially the protection of habitat for endangered species dependent upon late-successional forest ecosystems. Management for timber and other resources was superseded by new policies aimed at protecting most of the remaining areas of late-successional forest. This accelerated the transition to a forest products industry based on sustainable management of second-growth and planted forests, but with a greater economic shock and dislocation in the short term for industry and communities. On the other hand, the sudden decline in timber production in the Pacific Northwest, particularly on public lands, stimulated a sharp increase in timber harvesting and related ecological impacts in private forests in the U.S. South. Policies had been developed to meter out the remaining timber supplies from old-growth forests in the Pacific Northwest in order to minimize the shock to industry and communities.

Overall however, forest cover in the U.S. has gradually increased from a low point at the start of the 20th century. This has come mostly as a function of the abandonment of marginal crop and pastureland, and the shift from wood as a primary domestic and industrial fuel to fossil fuels. In addition, during the past three decades, economic growth and the continuing shift in population from rural to metropolitan areas has resulted in the conversion of as much as 2 million hectares per decade to development. Unlike conversion to alternative land uses such as agriculture, which

might be reversed at some point in the future, these losses to development are for all practical purposes permanent. In addition to the actual loss of forest cover, area is also being lost to forest use through parcelization and fragmentation. This division of large forest tracts into many smaller tracts often has negative implications for values such as wildlife habitat and watershed protection. It also makes forest management for economic purposes more difficult and expensive, and often hastens the process of conversion to nonforest land uses that yield a higher economic return.

The underlying causes of this kind of deforestation are many, and their relative importance varies depending on one's perspective. From the perspective of some private forest owners, this trend is being driven by the decreasing economic returns from forest management, resulting in part from uncertainties associated with government regulation. Various financial incentive and tax-reduction programs have been developed to address this issue. But economic returns from forestry often are a fraction of those available from conversion to developed land uses, particularly near metropolitan areas.

For many private forest owners, the appreciated value of their land and timber represents a significant component of their life savings, and conversion or fragmentation of their forest land is simply a function of maximizing economic return to pay for retirement, college tuition, and other major family expenses. Several programs have been developed to offer such landowners a conservation option that would provide an after-tax return comparable to what they could get from selling the land for development. These include government programs such as the Forest Legacy Program and NGO-led programs such as those by The Nature Conservancy. However, many tracts of private forest land are relatively small and isolated, and are not considered top priorities for acquisition unless they contain extraordinary conservation values, or complement existing adjacent conservation or protected areas. Thus, many small forest tracts continue to be lost to nonforest land uses; collectively they represent a significant area of loss of forest cover and forest land use.

Other private forest owners who have no immediate need to liquidate their forest assets choose to pass their forest land as a legacy to their heirs, but these tracts can still become fragmented in the process of paying subsequent "death taxes." In the U.S., these include an estate tax that must be paid to the federal government before the distribution of assets to heirs, and inheritance taxes that must be paid by individual heirs to state governments. If the estate also contains significant liquid financial assets, these may be sufficient to pay the required taxes. If not, then heirs often find themselves with little choice but to liquidate forest assets in order to pay the taxes.

There have been recent changes in federal estate tax laws aimed at minimizing this effect on family-owned farms and forests. Conservation NGOs and land trusts also have expanded their efforts to educate landowners about other options, such as conservation easements (see ___) that can reduce the "book" value of the forest asset for purposes of calculating estate and inheritance taxes that eventually must be paid. However, minimizing the impact of death taxes on forest fragmentation and conversion requires significant advance planning, and a level of information and investment that are beyond many forest landowners. Many of the incentives for keeping family forests intact from one generation to the next are already in place, but most private forest owners often lack the knowledge or ability to take advantage of them.

Forest degradation

Many of the underlying causes of forest degradation, such as most air pollution effects, have been brought largely under control in the U.S., and are on a stable or declining trend. However,

certain other factors contributing to degradation—notably fire, invasive pathogens, and silvicultural high-grading—have become resurgent problems of major proportions.

National air pollution control policies enacted in the 1970s, and strengthened through revisions and amendments in the 1990s, have significantly reduced forest damage from major pollutants such as sulfur dioxide and nitrous oxides. Forests in many regions, particularly in the South, continue to be exposed to high levels of tropospheric ozone.⁶

In 1998, nearly 30 million hectares of forested land in the U.S. were affected by insect and disease infestations.⁷ An increasing proportion of the most damaging outbreaks are caused by alien invasive species and exotic pathogens, against which native forest ecosystems have little defense. A relatively new alien pathogen, sudden oak death (*Phytophthora ramorum*) entered the U.S. from Asia, and has resulted in widespread mortality of several species of oak in California and the Pacific Northwest. Movement of this pathogen in forest ecosystems in the eastern U.S., where oaks are one of the largest forest components, could result in additional major ecological and economic impacts at a continental scale. Several federal and state agencies have undertaken new research initiatives to improve the identification and eradication of this and other exotic pathogens.

Forest fires, largely brought under control in the U.S. by 1960 (1.2 million hectares burned in that year, as compared with 21 million hectares burned in 1930), have once again become a major cause of forest damage. Ironically, it is largely the success of earlier fire suppression programs that is the cause for much of the current problem, by allowing forests to become overcrowded and forest fuels to accumulate to hazardous levels. Where possible, fire is being re-introduced to ecosystems where fire has historically played a natural role. Research and experimentation in this is being led by The Nature Conservancy and other NGOs, usually in cooperation with government agencies. Under new national policies enacted in 2001, intensive research and management actions are under way in other areas where hazardous fuel reduction cannot be accomplished by fire because of potential impact on air or water quality, or because of unacceptable risks to adjacent communities.

Forest fires are both a result of, and a contributing factor to, the increase in carbon dioxide and other greenhouse gases underlying climate change. The projected warming and drying of the climate in much of the interior of the U.S. is likely to contribute to an increase in the size and frequency of forest fires, themselves a significant source of carbon dioxide. Although there have been no significant policy responses at the national level, several states have enacted policies aimed at reducing greenhouse gas emissions. The private sector has responded as well, with 14 major corporations cooperating in the establishment of the Chicago Climate Exchange, an emissions trading market based on the cap-and-trade approach that has been so successful in quickly and cost-effectively reducing sulfur dioxide emissions in the U.S. since 1990.

Silvicultural high-grading continues to be a significant source of forest degradation, particularly in the eastern hardwood forests. These forests had largely recovered from a period of heavy exploitation in the mid-20th century. Just as in the past, however, many of these forests are now being exploited for the largest and most valuable trees, diminishing the overall value and

⁶ USDA Forest Service. 2004. National Report on Sustainable Forests – 2003. Washington, DC: US Department of Agriculture.

⁷ USDA Forest Service. 2001. RPA Assessment of Forest and Range Lands, 2000. Washington, DC: US Department of Agriculture.

contributing to long-term decline in genetic quality. Most of the forest land affected is privately owned. State government policies address this issue in some localities, but enforcement is difficult and often ineffective.

Forest Conservation And Restoration

UNFF Guidelines:

Please provide information on: activities undertaken since 1997, progress made, constraints encountered, lessons learned, and issues that have emerged, as well as relevant information related to means of implementation (financing, transfer of environmentally sound technologies, and capacity-building) related to the following elements:

Forest conservation and protection of unique types of forest and fragile ecosystems

- 5. creating or expanding protected areas to safeguard forest and related ecosystems and their full range of values and, developing and applying criteria and methodologies for assessing the conditions and management effectiveness in protected forest areas*
- 6. giving high priority in national forest programs to the rehabilitation and sustainable management of forests and trees in environmentally critical areas, recognising the linkage between forest protection and sustainable development and improving the coordination among such policies and programmes*
- 7. developing and implementing partnership mechanisms to engage forest owners, private sector, indigenous people and local communities in the planning and management of forest conservation areas and developing and implementing a range of innovative mechanisms for financing and encouraging forest conservation*

Development and implementation of appropriate planning and management strategies for the representative protection and conservation of the full range of forest values on an ecosystem basis within and outside protected areas

Given the diverse land ownership pattern in the U.S., the protection and conservation of a representative range of forest ecosystems necessarily must involve the participation of private forest lands as well as public. During the past decade, there has been a significant increase in efforts by NGOs, forest industry, and private landowners to protect forests of high conservation value on private lands, and to complement conservation efforts on public lands in protected areas and in areas managed for multiple values and uses.

Approximately one-third of the total land area of the U.S. has been placed in public ownership for the purpose of conservation and sustainable management. Of the 364 million hectares in public ownership, 284 million ha are in federal ownership, and the remaining 80 million ha are in state ownership. A significant portion of this is legislatively designated as wilderness (IUCN Protected Areas category I). The National Wilderness Protection System currently comprises more than 43 million ha, slightly less than 5 percent of the land area of the U.S. More than half of this is in Alaska (23 million ha), and much of the remainder is in the western U.S.⁸

In 1997, approximately 21 million ha of U.S. forest land were defined as reserved, meaning that they were withdrawn from timber harvesting by statute or administrative regulation (USDA Forest Service 2001). These lands correspond to IUCN category I (Strict Nature

⁸ USDA Economic Research Service. 1997. Major Uses of Land in the United States. 1997. Economic Research Service, USDA, Statistical Bulletin No. 973 (Appendix table 1, pages 32, 33)

Reserve/Wilderness Area), or IUCN category II (National Park). The area of reserved forest is approximately double what it was in 1953. Much of the remaining 90 million ha of public forest land can be classed as IUCN category III (National Monument), category IV (Habitat/species Management Area), category V (Protected Landscape), or category VI (Managed Resource Protection Area). During the past decade, timber harvesting on the public forests in IUCN categories III-VI has declined sharply.

Public forest land is unevenly distributed in the U.S., however. Of the 147 million ha of U.S. forest land west of the Great Plains, 69 percent is public; of the 156 million ha of forest east of the Great Plains, only 17 percent is public. The eastern forests are generally more biologically diverse than most western forest ecosystems. It has been estimated that the critical habitat for more than half of the Federally-listed threatened and endangered species occurs exclusively on private lands. It is now more widely acknowledged than a decade ago that any successful strategy for conserving native biological diversity in the U.S. depends as much on habitat protection on private forest lands as on public forest reserves.

Cooperation and coordination of activities concerning forests and trees in environmentally critical areas, including systematic data collection and analysis

Government agencies, environmental NGOs, and forest industry have significantly increased their level of cooperation and support for efforts to identify and conserve forest lands of significant conservation value, and to protect examples of the full range of natural ecosystem types found in the U.S. Early leadership in this area was provided by The Nature Conservancy through its Natural Heritage Program. In cooperation with state governments and federal agencies, The Nature Conservancy developed maps of all the major ecosystem types, with special attention to critical habitat for rare, local, threatened or endangered species. This information provided a basis for prioritizing habitat protection on both public and private lands, and for public acquisition of critical habitat as opportunities arose. Many states continue to implement natural heritage programs as a part of state government, with assistance and support from Federal agencies such as the U.S. Fish and Wildlife Service.

Major land conservation NGOs such as The Nature Conservancy have lately turned major attention to identifying and protecting the remaining large intact natural ecosystems on private lands, and providing for their conservation and restoration as part of a system of private preserves. Many of these preserves have been created by NGOs in cooperation with forest industry and other private sector organizations through gifts of land and/or financial sponsorship. A unique partnership has been formed between forest industry and conservation NGOs to identify, map, and protect areas of exception conservation value on forest industry lands that continue to be managed for sustainable wood production.

Rehabilitation and conservation strategies for countries with low forest cover

The U.S. is not a low forest cover country.

Rehabilitation and restoration of degraded lands and promotion of natural and planted forests

8. *promoting the creation of new forest resources through plantations and recognizing their role in rehabilitation of degraded lands and forests in environmentally critical areas*

*See above section on "Forest degradation."

9. *promoting policies to meet increasing demand for wood and non-wood forest products and services, through sustainable forest management.*

*See section below on “Economic Aspects of Forests.”

Implementation of the IPF/IFF proposals for action related to thematic issues of UNFF 3

UNFF Guidelines:

Please refer to your national report if appropriate, or provide new or updated information on: activities undertaken since 1997, progress made, constraints encountered, lessons learned, and issues that have emerged, as well as relevant information related to means of implementation (financing, transfer of environmentally sound technologies, and capacity-building) to support the following actions:

Economic aspects of forests, including trade

10. *valuation of forest goods and services (this may include, among other things, the development and use of new valuation methodologies, valuation of a wider range of goods and services, and policy decisions that reflect a more comprehensive assessment of forest values)*
11. *the amount, scope, or quality of market data and information for wood and non-wood forest products and their substitutes*
12. *use of economic and policy instruments to facilitate progress toward sustainable forest management (these may include improved tax policies and forest revenue collection systems)*
13. *efforts to reduce negative impacts of trade,*
14. *participation in forest certification and labelling schemes and work toward mutual recognition and comparability of such schemes, and*
15. *efforts to reduce illegal trade (exports from or imports into your country) in wood or non-wood forest products. Please indicate achievements made, lessons learned, constraints encountered, and planned initiatives.*

Economic Aspects of Forests

In the US, forests are a major economic resource. In recent years, softwood lumber production alone was valued at more than US\$250 billion annually, with exports valued at more than US\$17 billion. Management of highly productive, mostly temperate forests continues to be an important source of income, employment, and tax revenues in communities throughout the US.

Valuation of forest goods and services

Sustainable forest management requires an accurate valuation of the full range of goods, services and public values that flow from well-managed forests.

Economic and policy instruments in the US have largely addressed the negative externalities associated with commercial wood production, and who should pay for that mitigation. They have yet to determine how to maintain and compensate owners for many of the environmental values associated with maintaining forest cover. Federal policies, in combination with coordinated public policies at the state and local levels, have been largely successful in

requiring both private and public forest managers to internalize the costs of mitigating the effects of timber harvesting on water quality, air quality, wildlife habitat and other public values. By definition, this internalization of the negative externalities associated with timber harvesting has increased the cost of wood, particularly in relation to the cost of wood from countries that do not yet have such policies.

They have yet to determine how to maintain and compensate owners for many of the environmental values associated with maintaining forest cover.

The US is beginning to experience the costly diminishment of our forest's public benefits because of the loss of forest land. Forest valuation and full-cost accounting will become more important in the US with greater recognition of the negative externalities associated with losing existing forest lands. Current public debate suggests that existing mechanisms are not adequate to meet future needs to protect forests. As the price of wood products increases relative to non-wood substitutes (e.g. substitution of aluminum, steel or concrete building products for wood), the increased use of non-wood materials brings with it increased social, economic and environmental costs associated with higher energy inputs in manufacturing, and long-term effects from mining and processing nonrenewable resources.

Data and information on markets and prices

One of the first and most basic elements in forest management is a current and accurate *forest resources inventory*. An initial systematic forest inventory is needed to establish original or baseline characteristics and conditions. Regular, consistent, and systematic inventories provide the basis for assessments of change in those characteristics and conditions. Changes and trends in forest area, growth, yield, and mortality, along with periodic assessments of resource supplies relative to demand, provide essential information for policymakers to assure the sustainable management and use of a nation's forest resources. This also becomes important for private sector investment decisions. Periodic collection of data on *prices, production, trade and supply* in forest products and resources also provides critical information for both public policymakers and private-sector investors for an awareness of how market trends are affecting forest resources, regional economies and future markets. *Forest sector financial flows* both affect, and are affected by, all of this information, with important implications for inter-regional and international movements of capital.

In the United States, the systematic gathering of data on forest resources and financial flows has become almost entirely a function of the Federal government, with important cooperative relationships with other units of government and with the private sector. The first comprehensive inventories of the forest resources of the United States were conducted in the late 19th century, at a time when the US was making the transition from a developing country to a modern developed nation. At first, these inventories were focused on the large expanses of Federal forest land in the western US, but eventually they came to encompass the entire 747 million acres (302 million ha) of forest land held by the national government (33 percent), state and tribal governments (9 percent), forest industry (9 percent), and small private owners (48 percent) (1997 figures). A network of "continuous forest inventory" plots was established on public and private lands and has been periodically re-measured for several decades. Detailed forest resource reports are developed for each forested state approximately every ten years on a rolling basis, and a national-level "snapshot" of the forest resources of the United States is published approximately every five years. This data is made widely available to the public in both printed and electronic form. Recently, the United States has adopted the Montreal Process Criteria & Indicators (C&I) as the framework for presenting national-level forest resource data.

In recent years, several “eco-region assessments” have been developed for regions of the United States where important forest ecological, economic and social issues must be resolved in national-level policy. For example, concerns in the Pacific Northwest over the decline of endangered animal and fish species, and an associated sharp decrease in Federal timber harvesting on Federal lands to the regional economy, prompted an eco-regional assessment as the basis for policy decisions. A comprehensive assessment was also recently released for the Southeast region, where concerns over increasing timber harvesting, urbanization, and endangered species loom large.

Data collection on forest resources harvesting, prices and trade is less systematic. Federal agencies maintain current information on timber harvesting from the lands directly under their management. Timber production data from private lands is more difficult to obtain, and is largely derived indirectly through periodic assessments of change in forest inventory. Data on the manufacturing of wood products is gathered by several commerce-related Federal agencies, in cooperation with economic development agencies in state governments and with forest industry trade associations. Similarly, data on income and employment in the forest sector is compiled by labor-related Federal agencies, in cooperation with their counterpart agencies in state governments.

Less institutionalized is data collection on financial flows in the forest sector. Capital flows from forestry operations to corporate headquarters and to investors, and financial reinvestment back into local forestry operations, are internal and proprietary, making it difficult to collect this kind of data. Monitoring capital flows is further complicated by consolidation of the forest products industry in the United States and globally. US forest products companies have been acquired and consolidated by larger US, European and South African companies. General trends in financial flows in the private forestry sector are monitored by industry analysts, such as Price Waterhouse Coopers and reported annually in their Global Forest and Paper Industry Survey (www.pwcglobal.com), and by Federal trade- and commerce-related agencies.

Federal, state and private institutions in the US are examining changes in supply, demand, and markets for wood products, the affected markets for wood substitutes and the feasibility of substituted recycled materials for virgin fiber and wood product. They are also examining the extent to which increasing prices for wood products are increasing the demand for wood substitutes that can result in a net negative impact on the environment.

Economic and policy instruments to facilitate sustainable forest management

In recent years, new economic and policy instruments have been developed to recognize the positive environmental values associated with private forests, and to provide a means for forest owners to capture those values in ways that enhance the financial viability of continuing to hold and sustainably manage these lands as forest. Local governments in many jurisdictions maintain a lower level of annual property taxation for forest land, recognizing that forests contribute to community well-being in ways that developed land does not. Hundreds of nonprofit land trusts now purchase or accept donations of conservation easements or development rights that reduce annual property taxation. Federal and state governments are considering special provisions for estate and inheritance taxation to avoid forcing families to convert or prematurely harvest their forest lands simply to meet tax liabilities following the death of the previous owner. The Federal government provides funding for participating state governments to purchase environmentally important forest lands threatened by development or conversion. The Federal government is also considering granting tax-free status on income

from special conservation bonds, purchased to provide nonprofit land trusts with the capital necessary to purchase forest lands threatened with development.

These economic and policy instruments all provide mechanisms to share or transfer the costs associated with owning forest land and sustainably managing forests, thus increasing the likelihood that they will remain forested. Public and private institutions in the US are currently exploring additional ways important public values from private forests can be captured as sources of financial income to forest owners. Prices developed for non-market forest values such as watershed protection, recreation or wildlife habitat conservation have not proven very useful in practical applications. However, retention of forests for their environmental services, rather than paying to mitigate the loss of these services through technological means, has proven successful. New York City's protection of 2,000 square miles of forested watershed through purchases of development rights and other incentives to private forest owners is an example. This forest land conservation program, which cost approximately \$1.5 billion, meant there was no need for new city water treatment plants that would have cost an estimated \$7-8 billion.

Almost from the beginning of America's development of its institutional, legal and policy framework for forest conservation and management, public support and local capacity-building have been important parts of its implementation.

Local economic development based solely on wood production from Federal forests reached its highest point in the mid-20th century; nowadays management is based on the sustainable management and use of a greater diversity of forest resources. Communities heavily dependent on high levels of wood production from Federal forests have suffered from large fluctuations caused by swings in markets for wood and by changes in public policy. In addition, public concern over the protection of habitat for endangered species brought about rapid reductions in Federal timber harvests during the early 1990s, sometimes accompanied by significant economic and social dislocations, especially in communities dependent on wood production from federal forests. Evolving societal values regarding the conservation and sustainable management of forests resulted in several laws guaranteeing greater public participation in forest management planning and decision making processes. These include the National Environmental Policy Act of 1970 (NEPA), the National Forest Management Act of 1976 (NFMA) and the Federal Land Policy and Management Act of 1976 (FLPMA).

Indigenous people in the US are also gradually exerting their rights to influence, govern and manage large areas of tribal forest land negotiated to tribal governments in treaties that date back to the mid-1800s. In many instances, these forest lands are being managed by tribal governments according to widely accepted norms of sustainable forest management such as those under independent, third-party certification. In some cases, but not all, forest management by tribal governments has become an important engine of economic growth and capacity-building for indigenous communities, providing income and employment in woods work and in wood processing.

There are few direct opportunities for involvement by the public per se in the management of private forest lands in the US. Nevertheless, compliance with soil and water protection regulations are scrutinized carefully by the public, and most forest products companies and other major private forest landowners have been sensitive and responsive to public criticism. The Sustainable Forestry Initiative (SFI), a program of the American Forest & Paper Association, is largely an outgrowth of public concern over the management of industrial

timberlands, and is intended to provide independent assurance that these forests are now being well managed.

Participation in forest certification labeling schemes

Forest certification in the US remains a private, voluntary program for independent, third-party evaluation of forest management practices and eco-labeling of products from certified forest management operations. Certification is market-based mechanism that complements government regulation, and rewards forest managers for responsible forest management that meets or exceeds legal requirements. The major certification programs in the US are those of the Forest Stewardship Council (FSC) and the American Forest and Paper Association's Sustainable Forestry Initiative (SFI). The large majority of forestry enterprises that have become certified are on private lands, but in recent years several state and tribal governments have experimented with certification. The Federal government has not endorsed any particular certification system, preferring that the market place and individual actors determine which scheme or program is preferred. In the Federal sector, only forest lands managed by the military have been certified. The relationship between forest management plans endorsed by legislation on public lands and third party approval creates difficult practical and political questions to be addressed before certification is likely to extend to US National Forests and other federal public lands.

One of the indirect values of the development of private, voluntary forest certification programs in the US is that it has facilitated a more collaborative stance by environmental NGOs regarding forest management. Rather than simply being critical of existing forest practices, environmental NGOs involved with certification have taken an active role in developing a comprehensive set of forest management standards that, to them, define sustainable forest management. Such a clear description of forest management practices that are regarded as ecologically sound, economically viable and socially responsible has given the forestry community a well-defined objective. This applies to the management of natural forests for multiple resource values and to intensively managed plantations.

Forest certification has been an overall positive force moving the US closer toward a working consensus on forestry management practices that are broadly acceptable, and in demonstrating the value of independent, third-party evaluation to provide public assurance that agreed upon forest management practices are being implemented effectively.

Forest Health

Forest health and productivity

16. If damage to forests from air pollution is a significant problem in your country, please provide information on recent national strategies or programmes to minimize damaging air pollution. Please indicate if your country is involved in any international cooperation efforts aimed at strengthening scientific knowledge, increasing information access or reducing the impacts of long-range air pollution on forests, as well as your views on the role of enhanced cooperation at the regional and international levels to facilitate such work.

At the time the IPF/IFF proposals were being developed, there was a focus on air pollution effects on forest health. The proposals reflect this. The US has made substantial progress in implementing these proposals, but has also devoted significant resources to addressing other

forest health issues such as forest fuel accumulation (wildfires), insect and disease infestations, and invasive species that are major challenges for forest health and productivity in the US.

Air pollution effects on forests

Air pollution effects on forests are a major concern as forests in North America have exhibited declining health and increased mortality from air pollution, mostly in the form of acid rain. This was particularly serious in higher elevations in the eastern United States, where prevailing winds carry air pollution from the heavily industrialized areas of the American Midwest and Lake States. This air pollution also was carried across the border into forest areas in eastern Canada, creating a serious trans-boundary air pollution issue for the two countries.

To address the problem, the Clean Air Act amendments of 1990 established an innovative system for reducing sulfur dioxide emissions through a “cap and trade” mechanism. Pollution reduction goals are set by the Federal government, but market mechanisms rather than direct regulation are used to achieve the goals. Under the Clean Air Act, the US Environmental Protection Agency issued permits to utilities for a certain level of SO₂, and the right to trade these permits with other utilities. It was more expensive for older technology power plants to achieve the required reductions than it was for newer, more efficient power plants. This stimulated an active trading of SO₂ credits from new plants to old, but it also prompted the new plants to become even more efficient, so as to have more unused permits to sell. Ten years later, the market in SO₂ permits had grown to \$3 billion, overall SO₂ emissions by the utility industry are significantly *lower* than EPA targets, and at about a tenth of the predicted cost.

The trans-boundary air pollution issues affecting Canadian forests have resulted in new international collaborative actions. A joint Canadian-US commission was established through the Canada-US Air Quality Agreement of 1991 to monitor and report on the two countries’ progress in reducing emissions of SO₂ and NO_x. In 1994, the North American Free Trade Agreement (NAFTA) incorporated a North American Agreement on Environmental Cooperation that established a framework for regional cooperation on transboundary environmental issues, including air pollution.

The US has made substantial progress in addressing air pollution. The US established a forest health monitoring program to continuously assess changes in the health of forest ecosystems, especially in the eastern US, and to conduct research on the specific causes and how they negatively impacted forest health. This program has compiled a substantial body of data that is valuable in detecting further changes in forest health, identifying forest damage from air pollution at early stages, and prompting policy and forest management changes to mitigate these impacts. Although air pollution is still a significant issue affecting forest health in the US, particularly in the central Appalachian Mountains, its impacts have been significantly reduced by these efforts, which directly address the IPF/IFF Proposals for Action.

Emerging issues in forest health and productivity

During the past decade, forest health and productivity concerns in the United States have revolved around issues such as wildfires, insect infestations and disease outbreaks. Recent disease outbreaks have had a major impact on the yellow-cedar forests of Alaska. Infestations of mountain pine beetle (*Dendroctonus ponderosae*), have killed thousands of hectares of pine forest in the Rocky Mountain region of the western US. New exotic diseases are again threatening the extinction of forest species. Also, large-scale wildfires are occurring. In recent years, more than 100,000 wildfires have occurred annually, typically burning more than 1.6 million hectares. In 2002, Federal agencies spent a record US\$1.6 billion fighting wildfires.

Just as the 1910 fires so galvanized forest policy and management in the early 20th century, the severity of today's wildfires—and the large area of US forest that remain at significant risk for wildfire—have made fire management once again a major focus of US forest policy.

Ironically, the physical and biological circumstances that are now the basis for fire issues in forest health are largely the result of earlier forest management efforts, especially fire suppression. The successful prevention and prompt extinguishing of all fires over a period of several decades, especially in fire-dependent ecosystems like the pine forests of the Rocky Mountain region and the southeastern US, have produced highly unnatural conditions that make them prone to insect infestations, disease and wildfires. Now that human communities have expanded into many of these fire-prone forests, there is a difficult task to balance the conservation of commercial and ecological values of the forests themselves with the prevention of loss of life and property. At the national policy level, actions are being taken to reduce fire risks in forest areas adjacent to communities. There is also a renewed emphasis on developing the ecological science needed to provide forest managers with a clearer understanding of how best to manage both fire-dependent and fire-sensitive forests to maintain their health and productivity, and at the same time protect lives and property.

Invasive species are having major impacts on native biological diversity and are receiving renewed attention from forest scientists and forest managers. Introduced insect and disease organisms increasingly find their way to US forests through growth in international trade. Government agencies such as APHIS and the Forest Service are struggling to meet the challenge of protecting native forests from foreign biotic agents. Of equal concern is the continuing introduction of exotic plants and animals that adapt quickly to the environment in the US, crowding out native species.

Governmental responses have included eradication efforts and research on species-specific predators or diseases that might be used against invasive exotic species. However, experience has made scientists wary that impacts from such efforts may be as negative as those from the exotics they are attempting to eradicate. Biodiversity inventory and monitoring programs have been established by Federal and state governments, often in cooperation with NGOs, to assess the spread of invasive exotic species and set priorities for efforts to halt this spread. Finally, government agencies, the private sector, and NGOs are working together to identify and map remaining large, contiguous areas of high value for protecting native biodiversity, and take steps to minimize roads, trails, and other intrusions that could serve as vectors for aggressive invasive species.

Although forest fires, insects, diseases and invasive species were not specifically addressed in the IPF/IFF Proposals for Action, these factors are major obstacles to sustaining the health and productivity of US forests. Moreover, many of these very same issues are challenges in other nations throughout the world. Actions by the US to improve science, policy and management techniques to address these issues are essential to improving sustainable forest management in the US, and elsewhere.

Forest Land Conservation

Maintaining forest cover to meet present and future needs

- 17. Please indicate progress made and lessons learned in efforts to harmonize or to make compatible policy frameworks in your country (e.g. national forest programme or a similar policy framework for forests, biodiversity strategies and action plans, national*

action plans to combat desertification, etc.) that collectively address the full range of forest values.

18. *Please provide information on recent efforts to assess long-term trends in national supply and demand for wood, non-wood forest products and services and whether your country's national forest programme or similar policy framework for forests takes into consideration future needs for forest goods and services. Please provide views on how enhanced cooperation at the regional and international levels, including through UNFF, could further facilitate implementation of the IPF/IFF proposals for action*

The IPF/IFF Proposals for Action call for nations to maintain forest cover to meet present and future needs. Many of the individual proposals address the development of national assessments of long-term trends in supply and demand of various forest goods and services, and the development of national strategies for their sustainable management. To monitor forest condition and cover, the United States has been developing forest assessments focused on timber supply and demand for several decades, and more recently has expanded these assessments to consider a wider array of market and non-market goods, services, and public values.

Efforts to maintain forest cover and assess long-term trends

In the US, national assessments of long-term trends in forest goods and services have gradually evolved to reflect the importance of forests for both wood and non-wood forest products, and also for a variety of environmental services and social benefits. Forest resources data for both public and private forests is gathered on a regular basis (usually each decade) through a cooperative effort between the US Forest Service and the state forestry agencies. Changes in forest inventory (through growth, removals and mortality) have become the basis for periodic national assessments of long-term trends in supply and harvest of wood in the US; published at least every decade by the Federal government as the *Analysis of the Timber Situation in the United States*. This information is also utilized by a variety of private-sector analysts who have developed additional proprietary economic models for projecting demand, production and prices for wood products in the US and among our international trading partners.

Since passage of the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), the US Forest Service has conducted a broader and more diverse assessment of the long-term supply and demand of the goods, services, and public values derived from US forests. These include water resources, minerals, wildlife and fish, livestock forage, recreation and wilderness. The approach in the RPA Assessments to date has been to project supply and demand from current situation into the future based on certain assumptions about the driving forces influencing the forest sector. These models have become increasingly complex, incorporating macroeconomic factors influencing timber harvest levels, changes in population demographics influencing recreational use of forests, and trends in biodiversity conservation that may affect the area of forests available for wood production and other commodity uses. The Assessment uses a 50-year outlook, recognizing that the reliability of projections past the next decade are increasingly speculative.

The RPA also requires that every five years a program be developed, on the basis of the information in the Assessment, and approved by Congress, to outline the strategy deemed most likely to meet current and future national needs for the array of forest goods and services. Although this may be the closest US counterpart to what the IPF/IFF Proposals for Action refer to as a "national forest program," it should be noted that the RPA Program serves primarily to describe an overall strategy for the management of the National Forests, administered by the US Forest Service, and the research to guide that agency's cooperative efforts in working with states, local governments and through them, the private sector. It does not provide direct

guidance for the management of other Federal or state lands, nor for forest lands managed by forest industry, tribal authorities or small private owners.

In 1995, a partnership of public and private forestry and conservation organizations convened the Seventh American Forest Congress to take a different approach to establishing something akin to the “national forest program” described by the IPF/IFF process. The Seventh American Forest Congress brought together several thousand individuals, from both inside and outside the forest sector, to collectively articulate a vision for the future of US forestlands, and goals aimed at achieving that vision, rather than simply projecting the current situation forward. Given the level of contentiousness that has characterized the public debate over management of US forests during the past several decades, the Seventh American Forest Congress produced a remarkable breadth of consensus on the major elements of US forest policy. While the result of the Seventh American Forest Congress had no direct link into the national policy process, it continues to frame the debate and guide decision makers in developing additional components of US forest policy.

In recent years, assessments of forest cover in the US, and long-term projections of supply and demand for forest goods, services and values, have been expanded to include a broader spectrum of ecological, economic and social considerations. Comprehensive, science-based assessments at the national and regional scale have been developed not only by Federal government agencies, but by NGOs, the private sector, and state government agencies, often working in partnership. The 2000 RPA Assessment was the first to be developed using the Montreal Process Criteria and Indicators as its framework for reporting on conditions and trends in US forests. Its expanded emphasis on the conservation of biological diversity represents a continuing effort to achieve greater complementarity between a traditional “national forestry program” and a national strategy for biodiversity conservation.

To the extent that the US can be said to have a national strategy for biodiversity conservation, it began 100 years ago in Sebastian, Florida on Pelican Island, the first National Wildlife Refuge, created by President Theodore Roosevelt on March 14, 1903. The U.S. Fish and Wildlife Service is the principal Federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats. The Service manages the 38.4-million-hectare National Wildlife Refuge System, which encompasses more than 540 national wildlife refuges, thousands of small wetlands and other special management areas.

The next milestone was passage of the Endangered Species Act in 1973 (ESA). ESA established a process whereby the Federal government could be petitioned on behalf of a dwindling species for official listing as “threatened” or “endangered.” Once federally listed, a species is protected from hunting or any other “taking.” Under the terms of ESA, destruction of critical habitat for a threatened or endangered species is tantamount to a direct taking and is thus prohibited. Efforts to harmonize biodiversity conservation with forest management have proven difficult in the US, particularly given the style of multiple-use forest management practiced on most public and private forest land. The legal prohibition against any action that would diminish habitat for a federally-listed threatened or endangered species precludes many other types of management activities, leading many to conclude that the two purposes are largely conflicting rather than complementary. Efforts to reconcile these two purposes in the context of the National Forest Management Act actually raised the level of protection for threatened or endangered species beyond that guaranteed by ESA, requiring not only that critical habitat be protected, but that the US Forest Service adopt a forest management regime that would provide reasonable assurance of the continued viability of the species itself

throughout its range. Practical implementation of this provision has been extremely challenging, both scientifically and politically, and the policy is now under reconsideration.

Because so large a proportion of US forest land is in private ownership, biodiversity conservation strategy and implementation are driven as much by the private and NGO sectors as by government. In response to the Endangered Species Act, an NGO developed a “natural heritage” data base, an inventory of rare species and their habitats conducted on a state-by-state basis. In most instances, the state governments later assumed responsibility for the continuation of these efforts. The Nature Conservancy and World Wildlife Fund have continued to map, propose priorities and purchase areas of regional, national, and global significance for biodiversity as a basis for land conservation and habitat protection efforts. Numerous NGOs have joined to identify and locate High Conservation Value Forests (HCVFs) and work for their protection. Forest industry has undertaken a similar effort, in cooperation with The Nature Conservancy, to identify and map Forests of Exceptional Conservation Value on their own lands.

Taken together, this information and action is a substantial effort to conserve areas of high biodiversity value, and especially critical habitat for threatened or endangered species, on both public and private forest lands in the US. On public forest lands, regular periodic analysis and planning, such as the land and resource management plans developed for each National Forest at least every 15 years, now explicitly consider biodiversity conservation as a high-priority objective, along with the sustainable management of these forests for a variety of other goods and services.

For private forest lands, a range of different measures are used to protect important habitat. Literally hundreds of national, regional and local “land trusts” have been established to purchase or accept the donation of development rights on important tracts of private land. These “conservation easements” become a permanent restriction on the deed of ownership for the land so that, even if the land should change ownership in the future, all rights to develop the land and remove it from forest land use remain with the land trust. Conservation easements of this kind can be focused on only a specific area of critical habitat, or on the entire tract. A few large NGOs have come to own large areas of private nature preserves, which are managed solely for the protection of biodiversity values. The Nature Conservancy alone owns and manages more than 2 million ha of private preserves in the US. Finally, there are several large NGOs in the US whose primary purpose is to identify tracts of privately-owned forests with high conservation values, acquire these tracts with private funds, and then sell or donate these lands to Federal or state agencies to ensure their permanent protection as public lands.

Another major and growing consideration in maintaining forest cover in the US is ensuring adequate water supply for municipal, agricultural and industrial uses. Forested watersheds are the source of most freshwater supplies, in both the eastern and western United States. The US Forest Service estimates that, excluding Alaska, almost 70 percent of water runoff in the US comes from forested areas. National Forests alone contribute 14 percent of the total runoff. The value of water flowing from National Forests is estimated at more than \$3.7 billion annually.

Projections of long-term supply and demand for freshwater, assuming even modest increases in US population are prompting expanded conservation efforts for both public and private forests. On public forests, forest management decisions are being increasingly determined by what will maximize the effective capture, storage, and measured release of water for human consumption and in-stream habitat for sensitive species. In the eastern US, where forests are predominantly

privately-owned, concerns over water quality and future water supply are prompting the protection of forested watersheds through direct public acquisition of forest lands in municipal watersheds, and through purchase of development rights that prevent conversion to non-forest land uses, but allow private forest owners to continue managing for goods and services that do not negatively affect water quality.

US implementation of the IPF/IFF Proposals for Action to maintain forest cover to meet present and future needs is well-developed and comprehensive. Current approaches to assessing long-term supply and demand for a variety of goods and services, including overarching values such as conservation of existing biological diversity, reflect more than a century of gradual development of ecosystem science and institutional capacity. This institutional capacity now extends well beyond the role of the central government to encompass the capabilities of state authorities, a vital and active private sector, and NGOs. The success of this approach will enable the US to better protect its forests and the diversity of values they represent, and also to serve as a source of technical assistance to other nations in earlier stages of development.

Implementation of the IPF/IFF proposals for action related to thematic issues of UNFF 4

UNFF Guidelines:

Please refer to your national report if appropriate, or provide new or updated provide information on: activities undertaken since 1997, progress made, constraints encountered, lessons learned, and issues that have emerged, as well as relevant information related to means of implementation (financing, transfer of environmentally sound technologies, and capacity-building) related to the following elements:

Social and cultural aspects of forests

- 19. promoting the fair and equitable sharing of the benefits arising from the utilization of forest genetic resources and addressing the issue of intellectual property rights, including the identification of the origins of forest genetic resources, taking into account work undertaken by the Convention on Biological Diversity and other international agreements*
- 20. strengthening the role of women in sustainable forest management, including through capacity building and greater participation in community-based forest management*
- 21. integrating local and indigenous communities in sustainable forest management programmes, particularly as regards (a) recognition and respect of the customary and traditional rights and privileges of indigenous and local communities, (b) participation in decision making regarding the management of forests, (c) the attainment of secure land tenure arrangements, (d) capacity building and technology transfer for sustainable forest management directed at indigenous and local communities*

Social and Cultural Aspects of Forests

Strengthening the role of women in sustainable forest management

The past decade has witnessed a continued expansion of the role of women in sustainable forest management in the US, from the community level to the national level and beyond. Women now hold recognized leadership positions in community-based forestry organizations, indigenous forest-related organizations, and networks of these organizations, across the country. Women are in leadership positions in forest management organizations—in federal and state agencies and in forest industry. Women are in leadership positions at the national policy level in forestry, and are

among the leading participants for the US in international policy and planning related to sustainable forest management. Finally, women constitute a significant proportion of students in university programs in forestry, natural resource conservation, and environmental sciences, including advanced degree programs. This is increasing the number of women with the educational training and experience to further expand the leadership role of women in sustainable forest management in the future.

As in many other areas of the world, women traditionally have not been as well represented as men in forestry, natural resource management, and related activities. Changes in American society as a whole have been the primary cause for the growing participation of women in forest management as a profession. In recent decades, the social “obstacles” before women who desired to work in the male dominated forest profession have diminished. Women are now encouraged to work even in physically-demanding forestry activities, such as silviculture or fire suppression, and the percentage of woman in these jobs has grown steadily in government agencies, forest industry, and nongovernmental organizations. Women are also members or heads of households that own 117 million hectares of forest land, and thus exert significant influence on the management of a significant portion of private forests in the US as well.

Government agency hiring of women in the US is guided by national and state law and policies that are not unique to the forestry sector. For example all government agencies are subject to Equal Employment Opportunity laws that forbid discrimination on the basis of gender. Federal agencies are also subject to Affirmative Action rules, which may require actively increasing the mix of women and minorities in certain departments or positions. Private sector employment in the US is also subject to Equal Employment Opportunity requirements. Federal and state courts enforce these requirements, when necessary. For example, in a lawsuit brought in the state of California, a federal court determined that the Forest Service had not done enough to place women in high-level management positions. The Forest Service has responded affirmatively with initiatives to identify, train and advance qualified women to executive positions, including those at the national policy level. The Forest Service has also initiated outreach programs to attract more women to forestry, and especially employment with the Forest Service, through forestry education and cooperative employment programs. Even though the court ruling was specific to California, it has prompted action throughout the US, not only by the Forest Service but by other federal natural resource management agencies as well.

Women constitute a significant proportion of university students in forestry and related fields. Data available from the USDA Research, Education and Economics Information System indicates that the ratio of male to female students earning general forestry degrees over the last decade is 3:1.⁹ In advanced degree programs in forestry, the proportion of women students is roughly the same. In 2000, the percentage of women earning PhDs in forest biology was 25.9 percent; 30.8 percent in forest management; and 20.0 percent in wood science and pulp/paper technology, although it was almost 0% in forest engineering. Women earned 56.3 percent of the PhDs in conservation/renewable natural resources, however. According to membership data for the Society of American Foresters, the national professional society for foresters in the United States, women now constitute 11.9 percent of its membership, and comprise 7 percent of their pool of Certified Professional Foresters.

⁹ From the FAEIS website, <http://www.reeis.usda.gov>, which includes all Land Grant institutions along with some private universities.

All members of the public, be they women, minorities, or indigenous peoples, are afforded the opportunity to participate in public forest planning and decision making processes. For federal forest lands, laws such as the National Environmental Policy Act (NEPA) and the National Forest Management Act (NFMA), and administrative procedures allowing for the appeal of agency decisions, also provide for public participation and stakeholder consultation. The States have similar provisions for public and stakeholder participation. Although no data is available on numbers of individual women who participate under these processes as compared to men, women play a particularly strong role in sustainable forest management through the nongovernmental organizations (NGOs) that influence government agencies and forest industry decision making. National and state level environmental and conservation organizations such as The Nature Conservancy, National Wildlife Federation, World Wildlife Fund, and the Natural Resources Council of America have women in top level positions, including chief executive. Women are also leading many of the community-based organizations striving to balance ecological, economic and social priorities in forestry at the local level, and coordinating the activities of these organizations through organizations such as the Communities Committee, the National Network of Forest Practitioners, and the Forest Stewards Guild. There are indigenous women-led groups such as the Californian Indian Basketweaver's Association who are influencing national and regional forest management. In addition, a few states have formed non-profit "Women in Timber" organizations to promote the involvement of women in forestry activities and to provide educational resources to women forestland and business owners.

Supporting the role of local and indigenous people in sustainable forest management

The Proposals for Action call for including local and indigenous communities in sustainable forest management programmes, particularly in regard to (a) recognition and respect of the customary and traditional rights and privileges of indigenous and local communities, (b) participation in decision making regarding the management of forests, (c) the attainment of secure land tenure arrangements, (d) capacity building and technology transfer for sustainable forest management directed at indigenous and local communities. This is already happening in the U.S.

Community-based approaches to forest stewardship are central to many of the current policy debates in sustainable forest management on public lands, from wildland fire management, to biodiversity conservation, to sustainable forest-based economic development. Difficulties in reaching political consensus on these kinds of issues at the national level have prompted many communities to seek consensus among a similar diversity of stakeholders at the local level. In many instances, local communities have come together around common goals for environmental, economic and social sustainability, and have produced practical strategies for consideration by the agencies that manage these public lands. In some instances, these strategies have been adopted and successfully implemented. In other instances, national level interests have intervened and halted implementation. This has led to calls for the decentralization of decision-making, particularly relating to the federal forest lands, and possible devolution of management authority or ownership to local governments or the private sector. It is important to note that Indian lands in the U.S. are not public lands. They either held in trust by the U.S. for tribes and individuals or are owned in fee simple. Also, the management of these lands is decentralized.

In many regions of the world, decentralization of decision-making is seen as important to sustainable forest management, and devolution of forest ownership is regarded as essential to decentralization. In the US, these two concepts are not necessarily linked in this way. National forests were established to maintain federal lands in forest land use, sustain forest productivity for a variety of resources and values for the long term, and serve the needs of the nation as a whole rather than those of a few influential individuals or corporations. Within these broad goals,

however, there is flexibility to manage these forests in ways that meet local needs, challenges and opportunities. Historically, local forest managers representing federal agencies have had a high degree of flexibility to directly assess and meet community needs within a framework of national-level laws and policies. In recent years, policy controversies at the national level have resulted in a greater degree of centralization in forest management planning and decision-making. However, the increasing understanding and support for basic principles of sustainable forest management—among both the local and national level organizations—is leading back to a more decentralized approach to decision-making that will both protect the national interest in natural resource conservation and meet community level needs.

Although the Proposals for Action mention local and indigenous interests together, there are reasons to consider them separately as they relate to sustainable forest management in the US. While there are many similarities to the issues relating to community-based forest stewardship more broadly, there are numerous other issues that relate specifically to the management of indigenous Native American forest resource rights and interests. The inclusion of American Indian and Alaska Native communities in sustainable forest management programs, and the recognition of their traditional culture, rights and privileges, has its own complex history and mix of current issues. These include tribal control of reservation forests, treaty and other rights on former tribal lands, and the resolution of land claims. There is also growing recognition of the value of traditional forest management practices in mainstream forestry. These will be addressed separately.

Inclusion of local communities into sustainable forest management

Community forestry is a growing movement in the US, but has long been a part of the Bureau of Indian Affairs practice. It focuses on improving the health of the land and the well being of communities.¹⁰ It emphasizes decentralized natural resource management decision-making, and promotes social and economic self-reliance at a relatively small scale.

The Conservation Movement of the late 19th century, which established the early institutional, legal and policy framework for forestry in the United States, was motivated as much by community concerns as it was by national interests. Widespread “cut-and-run” forest exploitation had left many communities bereft of forests sufficient to meet basic needs for structural timber, wild game, or watershed cover to prevent destructive flooding. Forest reserves were established beginning in 1891 to retain forests in common public ownership, provide a local source of wood for developing communities, and prevent overuse by individuals for purposes such as timber harvesting and livestock grazing. At a time when America’s wealth was becoming increasingly concentrated in the hands of a few powerful individuals and corporations, the forest reserves were established to ensure that these essential resources remained available to the American people as a whole. The first national forests were created out of federal public domain lands in western states and territories. State and local interests pressed for the establishment of national forests in the eastern states as well, and the authority to acquire lands for the creation of new national forests was granted to the Forest Service in 1911.

Today there is a resurgence of interest in community forestry in the US, particularly in connection with the Federal public lands. Following World War II, the federal forests became a primary source of timber supply for producers of commodity wood products, and timber harvest levels increased sharply over the level of the previous five decades. This largely ended in the early 1990s when concerns over environmental impacts, especially in regard to habitat for threatened

¹⁰ Baker, Mark and J. Kusel. 2003. Community Forestry in the United States. Island Press.

and endangered species, resulted in a sharp decline in timber sales from federal lands. The dislocation of lumber and plywood manufacturing facilities in numerous rural communities resulted in economic hardship for many individuals who were unable or unwilling to relocate.

The sudden drop in federal timber harvesting programs contributed to a number of unplanned impacts on the public forests themselves. The timber programs had been the basis for financing many other programs such as road building and maintenance, forest thinning, wildlife and fish habitat improvements, recreation access and fire management. These programs were consequently also significantly reduced. These changes, in combination with the effects of decades of fire exclusion and drought, have contributed to a significant increase in insect and disease problems and wildfires. The wildfires, many of them of catastrophic proportions and causing unprecedented ecological and economic damage, have become a central concern in US forest policy today (i.e., the National Fire Plan.)

In response, the federal agencies have begun experimenting with new approaches to land management, in closer partnership with local communities. The Forest Service and BLM, for example, have undertaken a nationwide effort in which the agency enters into contracts or agreements with community groups, Tribes or private firms in local communities to provide a variety of land management services over a period of several years. These “land stewardship contracts” provide local employment and make local communities and Tribes active partners in balancing the many uses of nearby forests, and in ensuring the long-term sustainability of the wide variety of goods and services a well-managed forest is capable of providing. Through additional research and technical assistance, the Forest Service is helping communities to develop and market new products manufactured from small-diameter or underutilized tree species. In addition, help is provided to capitalize on high-value “non-timber forest products” (such as medicinal herbs, fir boughs, mushrooms and floral ferns) that can be sustainably gathered from nearby forests. The ideal is that local communities contribute to the active stewardship of their surrounding forests, and in so doing strengthen and diversify their economies on the basis of employment and income that can be sustained over the long term

Public forest management agencies are actively searching for more effective means of involving both national and local interests in consultation prior to forest management decision-making, and in the monitoring and evaluation of plan implementation. Multi-party monitoring could become an essential tool to provide independent assurance to the public that community-based stewardship and decentralized decision making are indeed keeping within the spirit and letter of national-level policy. Multi-party monitoring, involving a diversity of interests, has been used successfully in many different circumstances to evaluate agencies’ performance and ensure accountability.

There has also been a significant increase in community concern over the management of private forest lands, especially the large holdings of forest products companies. A number of large forest products companies in the US now participates in the Sustainable Forestry Initiative (SFI™). Originally developed by the American Forest and Paper Association, the SFI™ is an independent organization that strives to ensure that member companies adhere to basic standards of sustainable forest management through independent, third party certification. The SFI™ was created, partly, due to public and local concerns about how industrial forestlands are managed. The other major forest certification program utilized in the US, that of the Forest Stewardship Council (FSC), actually requires that participants involve local people and consider the rights of indigenous peoples.

Of perhaps greater concern on private forest lands is forest products companies divestiture of millions of hectares of timberland to investment companies and land developers. Economic globalization and the continuing consolidation of the forest products industry worldwide have prompted US companies to sell their timberland assets to finance debt, or to acquire land in other regions of the world with higher growth rates and lower operational costs. Private charitable foundations have assisted land conservation NGOs to acquire some of the most environmentally sensitive lands. Federal financial assistance programs have allowed some state governments to acquire ownership or development interests to protect other forest lands. However, the majority of these divested forest lands have been acquired by private investment companies. Some of these timber investment management organizations (TIMOs) maintain the lands as forest, managing for current income from timber harvesting and longer-term income from land appreciation. However, the explicit focus on maximizing income, rather than investing in the long-term health and productivity of the forest, has prompted public concern that these lands will be exploited or eventually sold for conversion to nonforest land uses.

Inclusion of indigenous communities in sustainable forest management

In recent years, federally recognized American Indian and Alaska Native tribes have achieved a high degree of autonomy and self-determination in the management of their forest resources. Indian forest lands that have been held in trust by the US federal government, and managed largely by US federal agencies for a century or more, are gradually returning to direct management by the tribes themselves, to serve a variety of tribal social, economic, cultural and spiritual needs as well as water, wildlife and sustainable wood production.

Long before European colonization of what is now the United States, Native Americans utilized their forest environment for “food, medicine, and materials for transportation, household use, and artistic expression and they served[d] as places of sanctuary for worship, contemplation, and inspiration.”¹¹ Indians were displaced from many of their ancestral lands, both before and after the establishment of the United States. Treaties created two kinds of rights: property rights on Indian reservations; and reserved rights on lands ceded to the U.S., such as hunting, fishing and gathering rights. During the 19th and 20th Centuries, the Bureau of Indian Affairs managed Indian forest lands, including both tribal and individual Indian lands. The Bureau of Indian Affairs (BIA), as federal trustee, has managed these lands according to what it believed to be the best interests of the tribes as beneficiaries. Second, the right to gather, hunt and fish was retained by the tribes on certain lands owned by the government, such as national forests and parks. The management on many of these lands emphasizes timber and water production, with relatively little attention given to other uses important to the tribes.

In the last four decades, tribes have been reasserting their rights and interests in a number of ways. Tribal governments have pressed for greater involvement in the management of all lands to which they have rights and interests. In 1975, the Indian Self-Determination and Education Act recognized the right of tribes to direct the management of their own forest resources, with trust oversight provided by the BIA.¹² Approximately half of tribal forestland is now under direct tribal management. In 1990, the National Indian Forest Resource Management Act further encouraged tribes to establish their own laws to regulate forest practices, management of wildlife, fish and water resources and protect environmental quality, and to seek advice on forest management opportunities from organizations other than the BIA.¹³ This law also called for a

¹¹ Morishima, G. 1997. From Paternalism to Self-Determination. *Journal of Forestry* 95(11): 4-9.

¹² 25 U.S.C. 450. Indian Self-Determination and Education Assistance Act of 1975. 88 Stat. 2203.

¹³ 25 U.S.C. 3101-3120. Indian Forest Resource Management Act of 1990. 104 Stat. 4532.

periodic assessment of forest management on tribal lands, along with a report to Congress, thus providing tribes an opportunity to demonstrate their ability to manage their own forest resources without assistance from the BIA. The first such report of the Indian Forest Management Assessment Team (IFMAT) was submitted to Congress in 1993. The second report was submitted in 2004.

Today in the continental US, there are 199 Indian reservations containing a total of 7.3 million hectares of forest land and 4.2 million hectares of woodlands (forested land with less than 5 percent crown cover of commercial timber species). The 97 most heavily forested reservations contain the approximately 2.3 million hectares that is actively managed for timber production. These lands contain an estimated standing inventory of 264 million cubic meters, and support an average annual allowable harvest of 5.1 million cubic meters. Of these 97 heavily forested reservations, the tribes themselves currently carry out all the functions formerly performed by the BIA at 35 of them.

A major recommendation in the 1993 report on the management of tribal lands was to redefine the federal government's role in discharging its trust responsibility so that tribal governments have primary responsibility for directing the management of forest resources on Indian lands. The federal government activities would focus on financial support, technical assistance, research and trust oversight.¹⁴ Supporting recommendations focused on the need for additional funding to support coordinated resource management and resource planning adequate to translate Indian visions for forest management into reality, for example integrated resources management planning (IRMP). A final, but strongly emphasized recommendation was to separate BIA's technical assistance function from its trust oversight function. A 1997 progress report indicated that BIA was still monitoring its own performance, but that tribes could appeal to an inspector general if they felt they had been wronged.¹⁵

In 1999, as part of the preparation for the next required ten-year assessment of forestry on tribal lands, 30 tribes sought out independent, third-party evaluation of their forest practices against rigorous standards for forest certification under the two major certification systems currently in use in the US (Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI™)). After preliminary evaluations, seven of the tribes proceeded to full-scale assessments under the FSC program. Use of independent, third-party certification in the future would help to address the need for standards for performance evaluation. It would also assist the BIA in its trust oversight function by utilizing independent monitoring, auditing and evaluation, and maintaining separation from its technical assistance functions. The BIA also works in cooperation with the Intertribal Timber Council, a non-profit consortium of over 70 tribes that works to improve the management of natural resources of importance to Native American communities.

NEED TO BRING IN 2004 REPORT

American Indians and Alaska Natives have also asserted their treaty and other rights outside of reservations. Hundreds of thousands of hectares of land has to been transferred back to the tribes. The largest such transfers were made pursuant to the Alaskan Native Lands Settlement Act. There have also been significant areas of land adjacent to reservations transferred back to tribes, or purchased by them.

¹⁴ IFMAT 1993. An Assessment of Indian Forests and Forest Management in the United States. Portland, OR: Intertribal Timber Council.

¹⁵ Gordon, J., Franklin, J., Johnson, K., Patton, D., Sedell, J., Sessions, J. and Williston, E. 1997. Journal of Forestry 95(11): 10-14.

Meeting the requirements of Indian ceded treaty and other rights has had a less direct, but still substantial impact on the management of forest lands outside the reservations. The best example is the Indian right to harvest 50 percent of the salmon in the Pacific Northwest. Because of very significant drop in the historic salmon runs, forest managers were required to change forest management practices to rebuild the fish populations.

There have been many ups and downs in the treatment of indigenous peoples in the US, but substantial progress has been made in recent years in supporting Native American tribes sovereignty, self-determination and ability to manage or influence the management of significant forest resources and to develop the capacity to manage these resources themselves.

Use Of Traditional Forest Related Knowledge For Sustainable Forest Management

Traditional forest-related knowledge

22. *inventorying, cataloguing, and applying traditional forest related knowledge for sustainable forest management and promoting research on TFRK with the involvement of the knowledge holders*
23. *supporting the application of intellectual property rights and/or other protection regimes for traditional forest related knowledge, and the fair and equitable sharing of benefits arising from the use of traditional forest related knowledge, innovations and practices*

Traditional knowledge plays a significant part in the management of American Indian and Alaska Native forests where tribal leadership, often in coordination with the Bureau of Indian Affairs, makes land management decisions. Native American cultures have long managed the land in order to create favorable environments for culturally significant plants, game species, and according to spiritual practices and beliefs. Especially in the West, many tribes used fire as a management tool.¹⁶ The Karuk tribe for example, used fire extensively in what is now Northern California to manage the land for bear grass species they used for making baskets and other items.¹⁷

Recognized tribes¹⁸ who manage their forestlands in coordination with BIA, tend to use a combination of Western science and traditional knowledge for management. Unrecognized tribes, as well as recognized tribes without their own lands, do not have such an easily available venue for utilizing their traditional forest related knowledge, although the USDA Forest Service often works in collaboration with tribes in managing National Forest lands. One tribal organization, the Maidu Cultural and Development Group, has used stewardship contracting to put their traditional knowledge to work cultivating culturally important plants, integrating traditional ecological knowledge into contemporary land management while performing thinning activities on National Forests lands.

¹⁶ Williams, Gerald W. 2001. References on the American Indian Use of Fire in Ecosystems. USDA Forest Service Document. http://www.wildlandfire.com/docs/biblio_indianfire.htm

¹⁷ “The Role of Traditional Ecological Knowledge in Managing Fire-Adapted Ecosystems,” a presentation given by Renee Stauffer of the Karuk Tribal Forestry Department at the NNFP Annual Meeting in October 2003.

¹⁸ The term “federally recognized tribe” means any Indian tribe, band, nation, or other organized group or community of Indians, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.), that is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians pursuant to the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450 et seq.).

In addition to the use of traditional knowledge by tribal peoples themselves, the academic community has investigated traditional knowledge in the areas of fire management, restoration, and especially with regards to managing for specific, non-timber forest products, or NTFP's. Ethnobotanists and anthropologists also work with US tribes to identify plants with significant medicinal and other properties. Tribes and agencies are seeking to protect this information to the greatest extent possible.

The decline in timber harvesting in regions such as the Pacific Northwest, and the accompanying economic impacts on rural forest-dependent communities, has spurred new interest in the gathering of NTFPs, from edible mushrooms to fir boughs to floral ferns, not so much for personal use as for the development of new commercial ventures that can serve as a primary source of employment and income in rural communities. Tribal peoples, as well as immigrants and rural communities, are providing useful information on how to sustainably manage for NTFPs and meet local cultural and economic needs.

Agencies managing public forest lands, where the majority of NTFP gathering takes place in most regions of the US, were largely unprepared for the rapid development of commercial gathering, giving rise to concerns for sustainability (of the NTFPs themselves and of other forest resources affected by NTFP gathering activities) and equity concerns to accommodate the use of resources by indigenous people and small scale gatherers. Over the past decade, organizations in the US have devoted substantial effort to research on the variety of NTFPs that are currently or potentially useful, the ecological implications of continued increases in NTFP gathering, and the policy framework needed to ensure sustainability and equity.

In recent years, a new appreciation has developed in the US for traditional forest-related knowledge including its critical role in sustaining traditional communities and its use in managing forestlands. Traditional knowledge¹⁹ has applications for restoration of forestlands, managing for particular species, conserving biodiversity, and using fire as a management tool. This traditional knowledge has been gleaned from indigenous Native American peoples, and also from European American populations that colonized forest areas and came to know them intimately as sources of food, medicine, tools, shelter, and spiritual renewal. A significant literature has developed cataloguing and describing this traditional forest-related knowledge from indigenous cultures and American folk life, prompted by concerns that this knowledge soon could be lost in our rapidly industrializing and urbanizing culture. Tribes, however, are sometimes reluctant to share traditional knowledge with others for a variety of reasons: fear of past and future exploitation, concern of the harm that can come from misuse, the lack of any true intellectual property rights for traditional knowledge, and the possibility of their knowledge being "corrupted," or shifting away from its true practice when used by individuals not immersed in their tribal culture.

Forest values and uses based on traditional knowledge, but taken to a large scale, have in some instances raised new problems in sustainable forest management. There has been a new discovery of the potential value of NTFPs as a key source of income and employment in rural communities suffering from the pressures of economic change. This is especially true in forest-dependent rural communities or external, transient labor forces hurt by the sudden reduction in timber harvesting over the past decade. In many areas, the gathering of NTFPs has gone quickly

¹⁹ A footnote is probably needed to point out that the term TK has yet to be defined domestically or internationally and as of this reporting, the U.S. looks to the UN's World Intellectual Property Organization's Working Group on Genetic Resources, Traditional Knowledge and Folklore as the primary forum for the development of voluntary guidelines aimed at protecting TK from misuse.

from occasional gathering for personal use, to regular gathering for supplemental family income, to large commercial enterprises that are the primary source of employment and income for entire communities. This rapid expansion of NTFP gathering activities, particularly on public forest lands, has raised significant questions regarding the ecological, economic and social sustainability of existing systems for managing these resources, and has necessitated an immediate response in both research and policy development.

Intellectual property rights

There has been little development in the US of intellectual property rights as they relate to traditional forest-related knowledge. The applications of traditional forest-related knowledge to the use and management of NTFPs has benefited greatly from recent studies of the diversity of uses by Native Americans.^{20 21} Ethnographic studies of the uses of NTFPs by indigenous Native Americans have been used to gain insights into the factors that influence their production and sustainability.²² Studies such as these have also identified pharmacological uses previously unknown outside the Native American community.^{23 24} Intellectual property rights are being developed for many newly-discovered medicinal or pharmacological uses of NTFPs, such as the use of Pacific yew (*Taxus brevifolia*) to produce a powerful anti-cancer drug known as taxol, the rights to which were held as a patent by the drug company that discovered this use through its own independent research.²⁵ American indigenous peoples have the ability to apply for and avail themselves of such U.S. protections.

The strong market demand for non-timber forest products of all kinds, combined with the economic opportunities this presents to rural communities struggling to survive, is resulting in far more rapid development than was anticipated by most. The resources being devoted by forestry agencies to research and policy development to address these issues are significantly more than in the past, but far less than is needed. As a result, the economic and legal conflicts among user groups, indigenous peoples and local communities can be expected to continue and increase.

Scientific Forest-Related Knowledge

Scientific forest-related knowledge

24. *disseminating scientific knowledge to all interested parties, including through new and innovative ways, and strengthening capacity and mobilizing funding for national and regional research institutions and networks*

²⁰ Hunn, Eugene S.; Turner, Nancy J.; French, David. 1998. Ethnobiology and subsistence. In: Walker, Deward, ed. Handbook of North American Indians, volume 12. Washington, DC: The Smithsonian Institution.

²¹ Turner, Nancy. 1997. Traditional ecological knowledge. In: Schoonmaker, Peter; von Hagen, Bettina; Wolf, Edward C., eds. The rainforests of home: an exploration of people and place. Washington, DC: Island Press.

²² Boyd, Robert. 1986. Strategies of Indian burning in the Willamette Valley. Canadian Journal of Anthropology. 5(1): 65-86.

²³ Turner, Nancy J. 1982. Traditional use of devil's club (*Oplopanax horridus araliaceae*) by native peoples in western North America. Journal of Ethnobiology. 2(1): 17-38.

²⁴ Turner, Nancy J.; Hebda, Richard J. 1990. Contemporary use of bark for medicine by two Salishan native elders of southeast Vancouver Island, Canada. Journal of Ethnopharmacology. 29: 59-72.

²⁵ Wolf, Edward; Wortman, David. 1992. Pacific yew management on National Forests: a biological and policy analysis. Northwest Environmental Journal. 8: 347-366.

25. *enhancing interaction between scientific research and policy processes, including priority setting of research, addressing of knowledge gaps and using scientific knowledge to support decision-making*

The US has well developed systems for developing and disseminating new scientific information relating to the conservation and sustainable use of forests. During the past decade, these systems have been augmented by initiatives aimed at incorporating a quickly evolving body of scientific information relating to a particular issue (e.g., biodiversity conservation, climate mitigation, invasive species), usually involving a diverse network of universities, government agencies, corporations and NGOs. Improving the use of current science in policymaking is a goal widely shared among forest conservation organizations, whether public, private or NGO, but most of these organizations express frustration at the degree to which other factors seem to influence policy decisions. In some instances, this is due to uncertainty or a lack of consensus on scientific findings among scientists themselves. In many instances, however, this is due to the influence of other economic or social considerations that naturally must be considered in any democratically elected constitutional government.

A commonly stated goal of nearly every organization involved in sustainable forest management is an improvement in “science-based policymaking.” There is a general expectation that a better understanding and appreciation of current science by policymakers will lead to more sound and sustainable forest management than can be arrived at simply through political maneuvering by competing interests. Several organizations have developed to advance this goal, such as the National Center for Science and the Environment (NCSE). Substantial progress has been made toward this goal in the US, but not necessarily to the satisfaction of any one interest or perspective.

The United States today has a diverse and well-developed network of public, private and nonprofit organizations conducting forest-related research and disseminating the results through a variety of print and electronic media. Policymakers at the federal and state levels generally understand and support the need for a continued strong forest research capability, and they generally utilize available scientific information as one component in the inherently political process of policy decision making.

In part because so much of forestry research in the US is publicly funded, current research priorities as established by such bodies as the National Science Foundation, the Cooperative State Research and Environmental Education Service (CSREES), and the Forestry Research Advisory Council tend to reflect the major forestry issues currently requiring near-term action by policymakers. Forest scientists in the US have expressed concern that this tendency, in combination with what many see as declining financial resources available for ongoing forest-related research, is resulting in a loss of research capacity in several important areas of forest science.²⁶

A perceived gap between forest science and forest practice was the basis for the recent formation of the National Commission on Science for Sustainable Forestry (NCSSF), a program of NCSE funded primarily by foundations and other private sources. The Commission is composed of a diverse group of scientists, forest managers and stakeholder interests, and concentrates on synthesis of scientific information for forestry practitioners to enable them to better conserve

²⁶ National Research Council. 2002. National Capacity in Forestry Research. National Academy Press, Washington, DC.; National Research Council. 1990. Forestry Research: A Mandate for Change. National Academy Press, Washington, DC.

biological diversity in forests. Where critical gaps in current science are identified, NCSFF competitively awards grants to scientists at universities and other scientific organizations to conduct the research necessary to address these knowledge gaps.

Monitoring, assessment and reporting, concepts, terminology and definitions

26. *improving information on national forest resources, making the information widely available, assisting other countries in their related efforts*

criteria and indicators of sustainable forest management

27. *developing and using criteria and indicators of sustainable forest management (at national level and/or subnational level and for policy, planning, management and/or monitoring purposes), and participating in regional and/or international C&I processes*

Monitoring, Assessment And Reporting Using Criteria And Indicators Of Sustainable Forest Management

Since the United States became a party to the agreement on the Montréal Process Criteria and Indicators (C&I), virtually all information in the monitoring, assessment and reporting on forests and forest management has been adapted to the C&I framework. For this reason, the US report combines two sections in the UNFF Secretariat's suggested reporting format (Monitoring, Assessment and Reporting; and, Criteria and Indicators of Sustainable Forest Management) into a single integrated section.

The first US report on conditions and trends in its forests to be developed entirely on the basis of the Montréal Process Criteria and Indicators (C&I) was issued in September 2003 (USDA Forest Service 2003). This *National Report on Sustainable Forests 2003* is the latest step in a decade-long process of re-examining US forests through the lens of the C&I, identifying information gaps to be filled, and setting the stage for taking decisive action on the conservation and sustainable management of US forests based upon the most thorough and comprehensive information ever assembled.

Assessments of conditions and trends in US forests have steadily improved since the first *Report Upon Forestry*, prepared by Dr. Franklin B. Hough in 1877.²⁷ The study was accomplished for \$2,000, and 25,000 copies were distributed by the USDA Division of Forestry in 1878. The assessment gained the attention of policymakers and the public, describing the extensiveness of US forest resources, but also the rapid rate of deforestation taking place and its implications for future timber supplies. This assessment was instrumental in the passage of the 1891 Forest Reserve Act, which authorized the creation of numerous public forest reserves and laid the foundation for today's US National Forest System.

A century later, with demands on US forests having multiplied many times over, the Forest and Rangeland Renewable Resources Planning Act (16 U.S.C. 1600 (note)) (RPA)²⁸ required the US Forest Service to prepare a comprehensive assessment of US forests every ten years, with special attention to the current and projected supply and demand for all major resources. The RPA also required the Forest Service to prepare a strategic plan, to be updated every five years, to describe

²⁷ Hough, F. 1878. Report Upon Forestry. Division of Forestry, US Department of Agriculture, Washington, DC.

²⁸ 16 U.S.C. 1600-1614. Forest and Rangelands Renewable Resources Planning Act of 1974. P.L. 93-378, 88 Stat. 476, as amended.

a longer term program of work designed to address the challenges and opportunities identified in the assessment. The strategic plan also provided Congress a longer term perspective in its consideration of annual budget appropriations to the Forest Service.

The 2000 RPA Assessment of Forest and Rangelands is the first of these assessments to be organized generally on the framework of the Montréal Process Criteria and Indicators.²⁹ Following US agreement to participate in the Montréal Process in 1994, a First Approximation Report was developed to examine the extent to which information already being gathered on US forests met the requirements of the C&I. Three categories emerged, C&I for which: (1) current data collection in the US is adequate, (2) current data collection is not adequate, but techniques for gathering the data are sufficiently well understood to support data collection in the future, and (3) current data collection is inadequate, and suitable techniques for data collection are not yet available. Since the First Approximation Report, federal and state forestry agencies have striven to recast their periodic assessments in the mold provided by the C&I. They have redoubled their own efforts, and cooperative efforts with universities and other research organizations, to discover effective, cost-efficient mechanisms to monitor, assess and report on the full range of ecological, economic and social aspects of forests described in the C&I.

The culmination of this effort to date is the *National Report on Sustainable Forests 2003*.³⁰ The *National Report on Sustainable Forests* was written over a period of three years by a team of more than 20 individuals from federal and state agencies, universities, and NGOs. The development of the report was continuously monitored and guided in an open process, known generally as the Roundtable on Sustainable Forestry, in which the full range and diversity of government agencies, NGOs, universities, businesses, and interested individuals participated on a voluntary basis. During the development of the *National Report*, there were several facilitated meetings of the Roundtable in which participants raised questions, offered advice, and provided useful information to supplement that already appearing in the report. A complete draft of the report was made available in print and electronic form in November 2002. The release of the final report was announced at the World Forestry Congress in September 2003.

Looking at conditions and trends in US forests in terms of 7 criteria and 67 different indicators it is difficult to arrive at a clear and simple determination of whether or not US forests are being sustainably managed. A key conclusion in the report reads as follows:

“The information we have about the criteria and indicators suggests, not surprisingly, that there is good news and bad news; reason for optimism and pessimism, depending on your viewpoint and on which indicators you consider. We do not suggest any conclusion about our current state of sustainability. Rather, we assert that the indicators must be interpreted in the total context of all the criteria and their associated indicators. They are richly interwoven. A positive movement in one might promote a negative change in some and a positive change in yet others. As we learn of changes, influences, and effects, we respond in turn as a society. The value of the indicators, viewed ensemble, is that they provide a common base of information that all parties can use to inform our understanding and improve our response. Ultimately, it is an individual matter to interpret the information, and our individual interpretations will lead to a

²⁹ USDA Forest Service. 2001. 2000 RPA Assessment of Forest and Rangelands. FS-687. USDA Forest Service, Washington, DC. Also available at: www.fs.fed.us/pl/rpa

³⁰ USDA Forest Service. 2003. National Report on Sustainable Forests—2003. USDA Forest Service, Washington, DC. Also available at: www.fs.fed.us/research/sustain.

collective societal response that will continue the evolution of the social framework that surrounds the notion of sustainable forest management.”

The portrait of US forests depicted in the *National Report on Sustainable Forests* is complex, and US progress toward sustainability is marked by both prevailing and countervailing trends. The Roundtable on Sustainable Forestry was careful to focus its efforts on fostering accurate, factual descriptions of current conditions and trends; the Roundtable chose to defer discussion of whether or not a given condition or trend was acceptable or unacceptable, recognizing the differences that would surely arise in a group of participants so diverse in its perspectives.

Now that process can begin. It is expected that discussions over the coming months will focus on determining what actions should be taken in response to the findings in the *National Report on Sustainable Forests*. Citizens of all perspectives will be asked for their views on the acceptability or unacceptability of conditions and trends in the various indicators. Inspired in part by previous efforts such as the IPF/IFF Proposals for Action, these citizens will be asked their views on the adequacy of the collective efforts of public, private and NGO organizations in the US to address the conditions described in the *National Report on Sustainable Forests*. They will be asked for their ideas for additional actions that can be taken to better respond to their own needs and the Proposals for Action. Finally, they will be asked for their sense of the priorities that should be attached to each of the potential additional actions, recognizing that some matters are more pressing than others, and that human and financial resources are not unlimited.

Over the past century, the US has made substantial progress in its assessments of its forests, and this progress will continue in the decades ahead. Through cooperative and technical assistance programs, the US is already assisting other nations in their development of useful assessments of their own forest resources, recognizing that this is a necessary first step toward conserving and sustainably managing forest resources. The US also looks forward to learning from other nations, as together all nations move forward toward the economically, socially and ecologically sustainable management of the world's forests.

Preparation of the Report

UNFF Guidelines:

Describe the process of preparing this report, including which government agencies and stakeholder groups were involved, and the extent to which they contributed. Provide information on successes, challenges and lessons learned in the preparation of this report.

This report was prepared through a collaborative effort between the U.S. State Department and the USDA Forest Service, with assistance from the Pinchot Institute for Conservation. Other federal forest management agencies, the National Association of State Foresters, private groups, NGOs, and members of tribal communities were also consulted during development of this report and their comments have been incorporated.

The U.S. report is somewhat unique as compared to other countries, in that its scope extends beyond the activities of the central government and includes policies, programs and activities by state and tribal governments, forest industry, private forest owner associations, and environmental non-governmental organizations that contribute collectively to U.S. progress on sustainable forestry and implementation of the Proposals for Action.

Multiple efforts have been made to seek out diverse stakeholder involvement and input from the Roundtable on Sustainable Forests on all U.S. country reports to the UNFF. A more formal stakeholder review is scheduled for early 2005.

