The Montreal Process:

Oregon's Role in the Global Effort

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In its technical reports, correspondence, and public meetings, the Oregon Department of Forestry frequently refers to something called "The Montreal Process." We thought it might interest readers of the Forest Log *to know how the Montreal Process originated, and why its concepts are important to sound stewardship practices in Oregon's forests, and in forests around the world.*

The Oregon Board of Forestry, which has policy oversight over all of Oregon's public and private forestland, is revising its comprehensive policy document, the Forestry Program for Oregon, *around the unifying theme of sustainability and will use the seven Montreal Process sustainability criteria as central goals in the revised document.*

Decades of Change Lead to Earth Summit, Focus World's Attention on Sustainable Forestry

Following the expansive and optimistic attitudes of the 1960s, in the 1970s a series of United Nations conferences were held that brought developing and industrialized nations together. In 1972 the *UN Conference on the Human Environment* fostered discussions on the 'rights' of the human family to a healthy and productive environment.

During the 1980s, decisionmakers and policy setters identified poverty as a major cause and effect of global environmental problems. There developed a growing realization in national governments that it is impossible to separate economic development issues from environment issues, and that it is futile to attempt to deal with environmental problems without addressing world poverty and international inequality.

Amidst this recognition that poverty intensifies pressures on the environment, there arose new discussions for global change. In 1982-83, these concerns led to the establishment of the World Commission on Environment and Development, chaired by Gro Harlem Brundtland, prime minister of Norway. Brundtland was the youngest person and the first woman ever to hold the office of prime minister in Norway.

Charged with nothing less than "a global agenda for change," the commission's findings served notice that the time had come for a marriage of economy and ecology. Its findings were published in 1987.

The commissions recommendations led to the Earth Summit, held in 1992 in Rio de Janeiro, Brazil. It focused world attention on sustainable forest management, seen as a key component of sustainable development. Sustainable development was defined as meeting the needs of today, without hurting the ability of future generations to meet their needs.

The Earth Summit was unprecedented for a United Nations conference, in terms of both its size and the scope of its concerns. The UN sought to help governments rethink economic development and find ways to halt the destruction of irreplaceable natural resources and pollution of the planet. Hundreds of thousands of people from all walks of life were drawn into the Rio process. They persuaded their leaders to go to Rio and join other nations in making the difficult decisions needed to ensure a healthy planet for generations to come.

The summit's message — that nothing less than a

transformation of our attitudes and behavior would bring about the necessary changes — was transmitted by almost 10,000 on-site journalists and heard by millions 'round the world. Again, the message reflected the complexity of the problems facing us: Both poverty as well as excessive consumption by affluent populations place damaging stress on the environment. Governments recognized the need to redirect economic plans and policies to ensure that all economic decisions fully took into account any environmental impact.

The Montreal Process Forms

As a response to the Earth Summit, in 1993 a conference was convened in Montreal, Canada, called the *International Seminar of Experts on Sustainable Development of Boreal and Temperate Forests.* The Montreal session was sponsored by what is now known as the Organization for Security and Cooperation in Europe (OSCE).

At the time, both Canada and the United States were interested in bringing the European and the post-Montreal processes together. However, following the Montreal seminar, the *Ministerial Conference on the Protection of Forests* in Europe elected to work as a region. Canada then took the lead in launching an initiative among non-European countries having boreal and temperate forests. The objective was to encourage development and implementation of internationally agreed-on national-level criteria and indicators for sustainable forest management.

In Geneva in 1994, the Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests was formed; this is now known as the "Montreal Process."

Since its inception, the liaison office for the Montreal Process has been hosted by the Canadian Forest Service. The office, located in Ottawa, provides various services including document preparation and distribution, process coordination and various clearinghouse functions.

Goals and Guideposts Defined in Chile

Between June 1994 and February 1995, five meetings took place to pursue development of a comprehensive set of forest sustainability criteria and indicators. At the sixth meeting, held in Santiago, Chile, ten nations endorsed a statement of political commitment known as the "Santiago Declaration." This declaration is a comprehensive set of criteria and indicators for forest conservation and sustainable management.

The criteria developed in Santiago address national-level policy and sustainability, but are not intended to directly assess sustainability at the forest management unit level. They are to be applied and evaluated according to various countries' needs and conditions.

The first six criteria deal with forest conditions, attributes or functions, and the values or benefits associated with the environmental and socio-economic goods and services that forests provide. These have become the goals and guideposts for the Montreal Process.

Primary Goals of the Montreal Process

The Montreal Process established 67 indicators that describe seven criteria or goals necessary for the conservation and sustainable management of temperate and boreal forests (The Montreal Process, 1999).

They are:

- conservation of biological diversity
- maintenance of productive capacity
- forest ecosystem health and vitality
- conservation of soil and water resources
- forests' contribution to global carbon cycles
- socioeconomic benefits
- legal and institutional framework

Twelve Countries in the Working Group

Twelve countries are involved in the Montreal Process Working Group — Argentina, Australia, Canada, Chile, China, Japan, Korea, Mexico, New Zealand, Russia, the United States, and Uruguay.

Together, these countries represent approximately:

- 60 percent of world's forests

- 90 percent of the world's temperate and boreal forests
- 45 percent of world trade in wood and wood products
- 35 percent of the world's population

2000 Meeting held in China

Montreal Process meetings are held annually, usually in the summer or fall, in locations around the world. In November of last year the Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests held its 12th meeting in Beijing in the People's Republic of China.

The meeting included 49 participants, including the 12 countries of the Montreal Process; observers from the Ministerial Conference on the Protection of Forests in Europe (MCPFE/Pan-European Forest Process), International Tropical Timber Organization (ITTO), African Timber Organization (ATO), Global Forest Policy Project, World Wide Fund for Nature China, Wetlands International; and representatives from Chinese Academy of Forestry, Beijing Forestry University, The Center of Economic Research and Development of SFA, Lin'an Forestry Bureau of Zhejiang Province, and Fujian Forestry College of Fujian Province.

The meeting welcomed presentations by Chinese forestry experts, including Professor Jiang Youxu, on "Sustainable Management — A Challenge and Opportunity to Forest Construction in China"; Dr. Wenfa Xiao, CAF, on "Development of Criteria and Indicators for Sustainable Forest Management in China"; and Mr. Lu Wenmin, CAF, on "Forestry Certification in China." These presentations provided participants with an excellent overview of current developments in China.

What's Oregon's Role?

The concepts of forest sustainability took on great meaning for State Forester James E. Brown when he attended the XI World Forestry Congress in Antalya, Turkey, in 1997. While there, he attended a dinner hosted by Cote Ivory (Ivory Coast, Africa), and heard the story of how that nation's government responded to the problem of local villagers plundering new forest plantations for fuel wood. In response, the government negotiated an agreement with the village leaders. Under the agreement, the villagers were given fuelwood-gathering rights for personal use and to sell to jobbers in the city, *as long as they tended the forest in a proper way*. The agreement solved both the economic and social needs of the village and the environmental needs of the nation.

This fairly simple model of open dialogue between the community-of-interest and the community-of-place had relevance internationally. Many other examples can be found where it is the community-of-place that actually tends and manages the forests. If somehow the community-of-place becomes disenfranchised, the forests they once tended can deteriorate over time. Without support from the community-of-place, successful implementation of hoped-for environment improvements will likely not succeed.

State Forester Brown returned to Oregon with a new vision of how the Montreal Process Criteria and Indicators could be used to build upon the foundation already established by the Board of Forestry's *Forestry Program for Oregon* mission and vision statements. He immediately began a dialogue with other policymakers on how Oregon could better evaluate whether its forests were meeting society's objectives and being managed for sustainability.

What the Future Holds

The year 2001 is not only the 30th anniversary of the Oregon Forest Practices Act, the first such forest regulatory program in the nation, it also marks the culmination of new Oregon forest policy initiatives that firmly establish the state as a continuing leader in sustainable forestry.

The Oregon Board of Forestry, which has policy oversight over all of Oregon's public and private forestland, is revising its comprehensive policy document, the *Forestry Program for Oregon*, around the unifying theme of sustainability. The board will use the seven Montreal Process sustainability criteria as central goals in the revised document. Results from the forest assessment project will be used to establish measurable policy objectives and an adaptive management loop. The board is also taking steps to shape the dynamics of how forest certification systems are applied on Oregon forestlands.

Members of the Montreal Process

Argentina, located in the southeastern part of South America. The country can be divided into four major physiographic provinces: the Andes to the west (with arid basins, foothills, glacial mountains and the Lake District), the fertile lowland north (with subtropical rainforests), the central Pampas (a flat mix of humid and dry expanses) and Patagonia (a combination of pastoral steppes and glacial regions). Argentina's climate ranges from subtropical in the north to humid and steamy in the center, and cold in the temperate south.

Australia, an island nation located south of Indonesia between the Pacific and Indian oceans. While Australia's forests and woodlands are dominated by eucalyptus, these are very diverse with over 700 species of eucalypti, which support a rich diversity of ecosystems, varied in their floristic composition, structure and fauna.

Canada, north of the United States, is the second largest country in the world with 42 percent of its lands forested. Canada contains 10 percent of the world's forest. Its forest cover varies from grasslands to temperate forests, and is boreal forest and arctic tundra across the north.

Chile lies on the western and southern part of the Southern Cone of America, extending to the Antarctic continent, and including Easter Island to the west. The country's climate range includes deserts, steppes, Mediterranean, rainy moderate warm, rainy maritime, cold steppes, tundra and polar climates. Eight vegetation areas have been identified for the country: desert, high Andean steppe, schlerophyllous brush and forest, deciduous forest, *Lauraceae* forest, Andean patagonian forest, evergreen forest, and peat bogs and patagonian steppe.

China is the third largest country in the world. It is located in northeast Asia with Mongolia on the northern border, and the East and South China seas to the east. Its geography varies from mountains to plains and deserts. The climate varies from sub-arctic in the northeast to tropical in the south.

Japan is a chain of islands located off the eastern edge of the Eurasian Continent. Most of Japan is under the influence of a wet monsoon climate and has four distinct seasons. Boreal, temperate and sub-tropical forests are distributed within the Japan's north-south ranging geography. Planted forests cover 41 percent of the country, while natural forests covered 53 percent in 1995.

Korea is a peninsular country located in Asia neighbored by China, Russia, and Japan. Korea has a temperate climate characterized by hot and humid summer monsoons and by cold and dry continental winter weather. In general, most of Korea's forest is temperate, but semi-tropical forest occurs in the southern part and semi-boreal forests in the northern part of the Korean peninsula.

Mexico is located in southern North America with the United States to the north. Its temperate forests are composed of pure conifer stands, mixed conifer, and hardwood stands. These forests are growing in the mountain regions of the country, in altitude bands ranging from 800 to 3,000 meters above sea level.

New Zealand, a geographically young country comprising two narrow mountainous islands and a number of small offshore islands, is located southeast of Australia in the Pacific Ocean. New Zealand's indigenous forests are located mainly in the mountain lands, particularly on the west coast of the South Island.

Russia is the largest country in the world. Stretching from the borders with Estonia, Latvia, Belarus, Ukraine and Turkey in the west, along borders with Kazakhstan, Mongolia and China, to reach the Pacific Ocean some 6,000 km later. Due to its great size, Russia has varied climates and a varied geography. It is a fairly cold country with northern pine and spruce forests. There are three major rivers that flow through the country as well as small Ural Mountains.

United States lands vary in character from the boreal forests of Alaska, to the temperate forests of most of the continental US, to the tropical forests of Puerto Rico and Hawaii. The vegetation cover varies greatly and is directly related to temperature and annual precipitation levels. Those areas receiving substantial precipitation are predominately forested, while semiarid and arid locations support grasses and shrubs and are often associated with irrigated agriculture and/or rangeland. Forests are widely, though unevenly distributed across the continent. They range from the sparse scrublands of the arid interior West, to the highly productive forests of the South and Pacific Coast. They include pure hardwood and softwood stands as well as mixtures.

Uruguay is located on the east coast of South America and bounded by Brazil to the north, Argentina to the west and the Atlantic Ocean to the east. Natural forests cover 3.3 percent of the national territory and are located on river banks and in hilly areas, wet valleys, parks, palm groves and coastal sandy areas. Different types of vegetation include meadow species, chircales, psammophytes, halophytes, and plants typical of marshy and aquatic environments.

Appendix A

CRITERIA AND INDICATORS FOR THE CONSERVATION AND SUSTAINABLE MANAGEMENT OF TEMPERATE AND BOREAL FORESTS

Criterion 1: Conservation of biological diversity

Ecosystem Diversity

1. Extent of area by forest type relative to total forest area.
2. Extent of area by forest type and by age class or successional stage.
3. Extent of area by forest type in protected area categories as defined by IUCN or other classification systems.
4. Extent of areas by forest type in protected areas defined by age class or successional stage.
5. Fragmentation of forest types.

Species Diversity

6. The number of forest dependent species.
7. The status (rare, threatened, endangered, or extinct) of forest dependent species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment.

Genetic Diversity

8. Number of forest dependent species that occupy a small portion of their former range.
9. Population levels of representative species from diverse habitats monitored across their range.

Criterion 2: Maintenance of productive capacity of forest ecosystems

10. Area of forest land and net area of forest land available for timber production.
11. Total growing stock of both merchantable and nonmerchantable tree species on forest land available for timber production.
12. The area and growing stock of plantations of native and exotic species.
13. Annual removal of wood products compared to the volume determined to be sustainable.
14. Annual removal of non-timber forest products (e.g. fur bearers, berries, mushrooms, game), compared to the level of determined to be sustainable.

Criterion 3: Maintenance of forest ecosystem health and vitality

15. Area and percent of forest affected by processes or agents beyond the range of historic variation, e.g. by insects, disease, competition from exotic species, fire, storm, land clearance, permanent flooding, salinisation, and domestic animals.
16. Area and percent of forest land subjected to levels of specific air pollutants (e.g. sulfates, nitrate, ozone) or ultra violet B that may cause negative impacts on the forest ecosystem.
17. Area and percent of forest land with diminished biological components indicative of changes in fundamental ecological processes (e.g. soil, nutrient cycling, seed dispersion, pollination) and/or ecological continuity.

Criterion 4: Conservation and maintenance of soil and water resources

18. Area and percent of forest land with significant soil erosion.
19. Area and percent of forest land managed primarily for protective functions. e.g. watersheds, flood protection, avalanche protection, riparian zones.
20. Percent of stream kilometers in forested catchments in which stream flow and timing has significantly deviated from the historic range of variation.
21. Area and percent of forest land with significantly diminished soil organic matter and/or changes in other soil chemical properties.
22. Area and percent of forest land with significant compaction or change in soil physical properties resulting from human activities.
23. Percent of water bodies in forest areas (e.g. stream kilometers, lake hectares) with significant variance of biological diversity from the historic range of variability.
24. Percent of water bodies in forest areas (e.g. stream kilometers, lake hectares) with significant variation from the historic range of variability in pH, dissolved oxygen, levels of chemicals (electrical conductivity), sedimentation or temperature change.
25. Area and percent of forest land experiencing an accumulation of persistent toxic substances.

Criterion 5: Maintenance of forest contribution to global carbon cycles

26. Total forest ecosystem biomass and carbon pool, and if appropriate, by forest type, age class, and successional stages.
27. Contribution of forest ecosystems to the total global carbon budget, including absorption and release of carbon.
28. Contribution of forest products to the global carbon budget.

Criterion 6: Maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies

Production and consumption

29. Value and volume of wood and wood products production, including value added through downstream processing.
30. Value and quantities of production of non-wood forest products.
31. Supply and consumption of wood and wood products, including consumption per capita.
32. Value of wood and non-wood products production as percentage of GDP.
33. Degree of recycling of forest products.
34. Supply and consumption/use of non-wood products.

Appendix A

Recreation and tourism

35. Area and percent of forest land managed for general recreation and tourism, in relation to the total area of forest land.
36. Number and type of facilities available for general recreation and tourism, in relation to population and forest area.
37. Number of visitor days attributed to recreation and tourism, in relation to population and forest area.

Investment in the forest sector

38. Value of investment, including investment in forest growing, forest health and management, planted forests, wood processing, recreation and tourism.
39. Level of expenditure on research and development, and education.
40. Extension and use of new and improved technology.
41. Rates of return on investment.

Cultural, social and spiritual needs and values

42. Area and percent of forest land managed in relation to the total area of forest land to protect the range of cultural, social and spiritual needs and values.
43. Non-consumptive-use forest values.

Employment and community needs

44. Direct and indirect employment in the forest sector and the forest sector employment as a proportion of total employment.
45. Average wage rates and injury rates in major employment categories within the forest sector.
46. Viability and adaptability to changing economic conditions, of forest dependent communities, including indigenous communities.
47. Area and percent of forest land used for subsistence purposes.

Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

Extent to which the legal framework (laws, regulations, guidelines) supports the conservation and sustainable management of forests, including the extent to which it:

48. Clarifies property rights, provides for appropriate land tenure arrangements, recognizes customary and traditional rights of indigenous people, and provides means of resolving property disputes by due process.
49. Provides for periodic forest-related planning, assessment, and policy review that recognizes the range of forest values, including coordination with relevant sectors.
50. Provides opportunities for public participation in public policy and decision making related to forests and public access to information.
51. Encourages best practice codes for forest management.
52. Provides for the management of forests to conserve special environmental, cultural, social and/or scientific values.

Extent to which the institutional framework supports the conservation and sustainable management of forests, including the capacity to:

53. Provide for public involvement activities and public education, awareness and extension programs, and make available forest related information.
54. Undertake and implement periodic forest-related planning, assessment, and policy review including cross-sectoral planning and coordination.
55. Develop and maintain human resource skills across relevant disciplines.
56. Develop and maintain efficient physical infrastructure to facilitate the supply of forest products and services and support forest management.
57. Enforce laws, regulations and guidelines.

Appendix A

Extent to which the economic framework (economic policies and measures) supports the conservation and sustainable management of forests through:

58. Investment and taxation policies and a regulatory environment which recognize the long-term nature of investments and permit the flow of capital in and out of the forest sector in response to market signals, non-market economic valuations, and public policy decisions in order to meet long-term demands for forest products and services.
59. Non-discriminatory trade polices for forest products.

Capacity to measure and monitor changes in the conservation and sustainable management of forests, including:

60. Availability and extent of up-to-date data, statistics and other information important to measuring or describing indicators associated with criteria 1-7.
61. Scope, frequency and statistical reliability of forest inventories, assessments, monitoring and other relevant information.
62. Compatibility with other countries in measuring, monitoring and reporting on indicators.

Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services, including:

63. Development of scientific understanding of forest ecosystem characteristics and functions.
64. Development of methodologies to measure and integrate environmental and social costs and benefits into markets and public policies, and to reflect forest related resource depletion or replenishment in national accounting systems.
65. New technologies and the capacity to assess the socioeconomic consequences associated with the introduction of new technologies.
66. Enhancement of ability to predict impacts of human intervention on forests.
67. Ability to predict impacts on forests of possible climate change.

MONTREAL PROCESS CRITERIA AND EXAMPLE INDICATORS FOR SUSTAINABLE FOREST MANAGEMENT