

Appendix A

Savage River State Forest - Citizens Advisory Committee

The stakeholder group that offers an advice and expertise from a local forest-users perspective is the Forest Advisory Committee (FAC). This group is appointed by the DNR secretary and is composed of eleven diverse groups of resource perspectives.

Groups represented on the FAC are:

- (a) Wildlife Professional
- (b) Fisherman
- (c) Conservationist
- (d) Timber
- (e) Forestry Professional
- (f) Economic
- (g) Recreation User
- (h) Youth
- (i) Hunting
- (j) Recreation Professional
- (k) Ecologist

Appendix B

FSC – Standards and Principles

FSC – US Forest Management Standard (v1.0) (w/o FF Indicators and Guidance)

Recommended by FSC-US Board, May 25, 2010
Approved by FSC-IC, July 8, 2010

Principle #1: Compliance with laws and FSC Principles

Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.

Principle #2: Tenure and use rights and responsibilities

Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.

Principle #3: Indigenous peoples' rights

The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.

Principle #4: Community relations and worker's rights

Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.

Principle #5: Benefits from the forest

Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

Principle #6: Environmental impact

Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

Principle #7: Management plan

A management plan -- appropriate to the scale and intensity of the operations -- shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.

Principle #8: Monitoring and assessment

Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.

Principle #9: Maintenance of high conservation value forests

Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

Principle #10: Plantations

Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

For additional information go to the Forest Stewardship Council homepage at:

<http://www.fsc.org/en/>

Appendix C

SUSTAINABLE FORESTRY INITIATIVE® (SFI)

2010-2014 STANDARD

Note: This following information is an excerpt from Section 2 of the 2010-2014 SFI Standards. For additional details go to http://www.sfiprogram.org/sustainable_forestry_initiative_standard.php

Principles for Sustainable Forestry

SFI Program Participants believe forest landowners have an important stewardship responsibility and a commitment to society, and they recognize the importance of maintaining viable commercial, family forest, and conservation forest land bases. They support sustainable forestry practices on forestland they manage, and promote it on other lands. They support efforts to protect private property rights, and to help all private landowners manage their forestland sustainably. In keeping with this responsibility, SFI Program Participants shall have a written policy (or policies) to implement and achieve the following principles:

1. Sustainable Forestry

To practice sustainable forestry to meet the needs of the present without compromising the ability of future generations to meet their own needs by practicing a land stewardship ethic that integrates reforestation and the managing, growing, nurturing and harvesting of trees for useful products and ecosystem services such as the conservation of soil, air and water quality, carbon, biological diversity, wildlife and aquatic habitats, recreation, and aesthetics.

2. Forest Productivity and Health

To provide for regeneration after harvest and maintain the productive capacity of the forest land base, and to protect and maintain long-term forest and soil productivity. In addition, to protect forests for economically or environmentally undesirable levels of wildfire, pests, diseases, invasive exotic plants and animals and other damaging agents and thus maintain and improve long-term forest health and productivity.

3. Protection of Water Resources

To protect water bodies and riparian zones and to conform to best management practices to protect water quality.

4. Protection of Biological Diversity

To manage forests in ways that protect and promote biological diversity, including animal and plant species, wildlife habitats, and ecological or natural community types.

5. Aesthetics and Recreation

To manage the visual impacts of forest operations, and to provide recreational opportunities for the public.

6. Protection of Special Sites

To manage forests and lands of special significance (ecologically, geologically or culturally important) in a manner that protects their integrity and takes into account their unique qualities.

7. Responsible Fiber Sourcing Practices in North America

To use and promote among other forest landowners sustainable forestry practices that are both scientifically credible and economically, environmentally and socially responsible.

8. Avoidance of Controversial Sources including Illegal Logging in Offshore Fiber Sourcing
To avoid wood fiber from illegally logged forests when procuring fiber outside of North America, and to avoid sourcing fiber from countries without effective social laws.

9. Legal Compliance

To comply with applicable federal, provincial, state, and local forestry and related environmental laws, statutes, and regulations.

10. Research

To support advances in sustainable forest management through forestry research, science and technology.

11. Training and Education

To improve the practice of sustainable forestry through training and education programs.

12. Public Involvement

To broaden the practice of sustainable forestry on public lands through community involvement.

13. Transparency

To broaden the understanding of forest certification to the SFI 2010-2014 Standard by documenting certification audits and making the findings publicly available.

14. Continual Improvement

To continually improve the practice of forest management, and to monitor, measure and report performance in achieving the commitment to sustainable forestry.

These SFI principles are further refined in objectives 1-20.

OBJECTIVES FOR SUSTAINABLE FORESTRY

SUMMARY

Some Program Participants own forest land, others own forest land and manufacturing facilities and others own manufacturing facilities only. As such:

- SFI Standard land management objectives 1-7 provide measures for evaluating Program Participants' conformance with the SFI 2010-2014 Standard on forest lands they own or control through long-term leases. Through these objectives, addressed in forest management plans, Program Participants are implementing sustainable forestry principles by employing an array of economically, environmentally and socially sound practices in the conservation of forests – including appropriate protection, growth, harvest and use of those forests – using the best scientific information available.
- SFI Standard fiber sourcing objectives 8-10 provide measures for evaluating Program Participants' conformance with the SFI 2010-2014 Standard through their fiber sourcing programs within the United States and Canada.

- SFI Standard fiber sourcing objectives 11-13 provide measures for evaluating Program Participants' conformance with the SFI 2010-2014 Standard through their fiber sourcing programs outside the United States and Canada.
- SFI Standard land management and fiber sourcing objectives 14-20 provide measures for evaluating all Program Participants' conformance with the SFI 2010-2014 Standard for research, training, legal compliance, public and landowner involvement, management review, and continual improvement.

A summary of SFI 2010-2014 Standard objectives follows:

Objective 1. Forest Management Planning

To broaden the implementation of sustainable forestry by ensuring long-term forest productivity and yield based on the use of the best scientific information available.

Objective 2. Forest Productivity

To ensure long-term forest productivity, carbon storage and conservation of forest resources through prompt reforestation, soil conservation, afforestation and other measures.

Objective 3. Protection and Maintenance of Water Resources

To protect water quality in streams, lakes and other water bodies.

Objective 4. Conservation of Biological Diversity including Forests with Exceptional Conservation Value

To manage the quality and distribution of wildlife habitats and contribute to the conservation of biological diversity by developing and implementing stand- and landscape-level measures that promote habitat diversity and the conservation of forest plants and animals, including aquatic species.

Objective 5. Management of Visual Quality and Recreational Benefits

To manage the visual impact of forest operations and provide recreational opportunities for the public.

Objective 6. Protection of Special Sites

To manage lands that are ecologically, geologically, or culturally important in a manner that takes into account their unique qualities.

Objective 7. Efficient Use of Forest Resources

To promote the efficient use of forest resources.

Objective 8. Landowner Outreach

To broaden the practice of sustainable forestry by forest landowners through fiber sourcing programs.

Objective 9. Use of Qualified Resource and Qualified Logging Professionals

To broaden the practice of sustainable forestry by encouraging forest landowners to utilize the services of forest management and harvesting professionals.

Objective 10. Adherence to Best Management Practices

To broaden the practice of sustainable forestry through the use of best management practices to protect water quality.

Objective 11. Promote Conservation of Biological Diversity, Biodiversity Hotspots and High-Biodiversity Wilderness Areas

To broaden the practice of sustainable forestry by conserving biological diversity, biodiversity hotspots and high-biodiversity wilderness areas.

Objective 12. Avoidance of Controversial Sources including Illegal Logging

To broaden the practice of sustainable forestry by avoidance of illegal logging.

Objective 13. Avoidance of Controversial Sources including Fiber Sourced from Areas without Effective Social Laws

To broaden the practice of sustainable forestry by avoiding controversial sources.

Objective 14. Legal and Regulatory Compliance

Compliance with applicable federal, provincial, state and local laws and regulations.

Objective 15. Forestry Research, Science, and Technology

To support forestry research, science, and technology, upon which sustainable forest management decisions are based.

Objective 16. Training and Education

To improve the implementation of sustainable forestry practices through appropriate training and education programs.

Objective 17. Community Involvement in the Practice of Sustainable Forestry

To broaden the practice of sustainable forestry by encouraging the public and forestry community to participate in the commitment to sustainable forestry, and publicly report progress.

Objective 18. Public Land Management Responsibilities

To support and implement sustainable forest management on public lands.

Objective 19. Communications and Public Reporting

To broaden the practice of sustainable forestry by documenting progress and opportunities for improvement.

Objective 20. Management Review and Continual Improvement

To promote continual improvement in the practice of sustainable forestry, and to monitor, measure, and report performance in achieving the commitment to sustainable forestry.

For additional information on the Sustainable Forestry Initiative go to the homepage at:
<http://www.sfiprogram.org/index.cfm>

Appendix D

Savage River State Forest: Soil Management Groups

This is a forest management grouping designed specifically for the Savage River State Forest plan, based on the soil series descriptions contained in the survey.

SMG 1 - Very Poorly Drained to Poorly Drained Mapping Units with Moderate Limitations Affecting Construction of Haul Roads and Log Landings

Ar, Armagh Silt Loam, 2.2 Acres, <1% of total

BrA, Brinkerton and Andover Silt Loams, 0 to 3 percent slopes, 47 Acres, <1% of total

BrB, Brinkerton and Andover Silt Loams, 3 to 8 percent slopes, 38 Acres, <1% of total

Ls, Lickdale very stony silt loam, 2 Acres, <1% of total

Acreage total of 88.6 Acres, <1% of Total Area

SMG 2 - Very Poorly Drained to Poorly Drained Mapping Units with Severe Limitations Affecting Construction of Haul Roads and Log Landings

An, Alluvial Land, 796 Acres, 1% of total

Ao, Alluvial Land, Very Stony 383 Acres, 1% of total

At, Atkins Silt Loam, 74 Acres, <1% of total

BsC, Brinkerton and Andover Very Stony Silt Loams, 0 to 15 percent slopes, 876 Acres, 2% of total

Acreage total of 2128.9 Acres, 4 % of Total Area

SMG 3 - Somewhat Poorly Drained to Moderately Well Drained Mapping Units with Moderate Limitations Affecting Construction of Haul Roads and Log Landings

AbB, Albrights Silt Loam, 0 to 8 percent slopes, 43 Acres, <1% of total

AbC2, Albrights Silt Loam, 8 to 15 percent slopes, 93 Acres, <1% of total

CoB, Cavode silt loam, 0 to 8 percent slopes, 46 Acres, <1% of total

CoC2, Cavode silt loam, 8 to 15 percent slopes, moderately eroded, 47 Acres, <1% of total

CtB, Cookport channery loam, 0 to 8 percent slopes, 12 Acres, <1% of total

CtC2, Cookport channery loam, 8 to 15 percent slopes, moderately eroded, 1 Acres, <1% of total

CuD, Cookport and Ernest very stony silt loams, 8 to 25 percent slopes, 2795 Acres, 5% of total

ErA, Ernest silt loam, 0 to 3 percent slopes, 13 Acres, <1% of total

ErB, Ernest silt loam, 3 to 8 percent slopes, 108 Acres, <1% of total

ErC2, Ernest silt loam, 8 to 15 percent slopes, moderately eroded, 106 Acres, <1% of total

ErD2, Ernest silt loam, 15 to 30 percent slopes, moderately eroded, 1 Acre, <1% of total

WhB2, Wharton silt loam, 0 to 10 percent slopes, 53 Acres, <1% of total

WhC2, Wharton silt loam, 10 to 20 percent slopes, 27 Acres, <1% of total

Acreage total of 3344.8 Acres, 6% of Total Area

SMG 4 - Somewhat Poorly Drained to Moderately Well Drained Mapping Units with Severe Limitations Affecting Construction of Haul Roads and Log Landings

AgC, Albrights Very Stony Silt Loam, 0 to 15 percent slopes, 903 Acres, 2% of total

CuB, Cookport and Ernest very stony silt loams, 0 to 8 percent slopes, 2804 Acres, 5% of total

Ph, Philo silt loam, 17 Acres, <1% of total

Acreage total of 3723.8 Acres, 7% of Total Area

SMG 5 - Well Drained Mapping Units with Slight to Moderate Limitations Affecting Construction of Haul Roads and Log Landings

CaC2, Calvin-Gilpin-Ungers channery loams, 10 to 20 percent slopes, 188 Acres, <1% of total

CaD2, Calvin-Gilpin-Ungers channery loams, 20 to 35 percent slopes, 257 Acres, <1% of total

CaD3, Calvin-Gilpin-Ungers channery loams, 20 to 35 percent slopes, severely eroded, 96 Acres, <1% of total

CnC2, Calvin, Ungers, and Lehew channery loams, 10 to 20 percent slopes, 1479 Acres, 3% of total

CnD2, Calvin, Ungers, and Lehew channery loams, 20 to 35 percent slopes, 698 Acres, 1% of total

CnD3, Calvin, Ungers, and Lehew channery loams, 20 to 35 percent slopes, severely eroded, 265 Acres, <1% of total

CrB, Clymer channery loam, 0 to 10 percent slopes, 48 Acres, <1% of total

DbB, Dekalb channery loam, 0 to 10 percent slopes, 434 Acres, 1% of total

DbC2, Dekalb channery loam, 10 to 20 percent slopes, moderately eroded, 348 Acres, 1% of total

DbD2, Dekalb channery loam, 20 to 35 percent slopes, moderately eroded, 79 Acres, <1% of total

DgD, Dekalb and Gilpin very stony loams, 15 to 25 percent slopes, 3024 Acres, 6% of total

DID, Dekalb and Leetonia very stony sandy loams, 15 to 25 percent slopes, 1928 Acres, 4% of total

GnB2, Gilpin channery silt loam, 0 to 10 percent slopes, 502 Acres, 1% of total

GnC2, Gilpin channery silt loam, 10 to 20 percent slopes, 976 Acres, 2% of total

GnD2, Gilpin channery silt loam, 20 to 35 percent slopes, 290 Acres, 1% of total

GnD3, Gilpin channery silt loam, 20 to 35 percent slopes, severely eroded, 22 Acres, <1% of total

LaD, Laidig very stony loam, 8 to 25 percent slopes, 197 Acres, <1% of total

McB, Meckesville silt loam, 0 to 8 percent slopes, 50 Acres, < 1% of total

McC2, Meckesville silt loam, 8 to 15 percent slopes, moderately eroded, 72 Acres, < 1% of total

MdD, Meckesville very stony silt loam, 8 to 25 percent slopes, 605 Acres, 1% of total

UcB, Ungers, Calvin, and Lehew channery loams, 0 to 10 percent slopes, 877 Acres, 2% of total

UnB, Ungers-Gilpin-Calvin channery loams, 0 to 10 percent slopes, 114 Acres, <1% of total

VsF, Very stony land, steep, 154 Acres, <1% of total

Acreage total of 12703 Acres, 24% of Total Area

SMG 6 - Well Drained Mapping Units with Severe Limitations Affecting Construction of Haul Roads and Log Landings

CIE, Calvin and Lehew channery loams, 35 to 50 percent slopes, 872 Acres, 2% of total

DcC, Dekalb-Calvin-Lehew very stony loams, 0 to 15 percent slopes, moderately eroded, 870 Acres, 2% of total

DcD, Dekalb-Calvin-Lehew very stony loams, 15 to 25 percent slopes, moderately eroded, 1946 Acres, 4% of total

DgC, Dekalb and Gilpin very stony loams, 0 to 15 percent slopes, 2153 Acres, 4% of total

DIC, Dekalb and Leetonia very stony sandy loams, 0 to 15 percent slopes, 2192 Acres, 4% of total

LaB, Laidig very stony loam, 0 to 8 percent slopes, 28 Acres, <1% of total

MdB, Meckesville very stony silt loam, 0 to 8 percent slopes, 203 Acres, < 1% of total

VsD, Very stony land, rolling, 2730 Acres, 5% of total
Acreage total of 10993.5 Acres, 20% of Total Area

SMG 7 - Soil Mapping Units that are Variable and have no Defined Drainage Class with Moderate Limitations Affecting Construction of Haul Roads and Log Landings

Cv, Cut and Fill Land, 3 Acres, <1% of total
St, Strip Mines and Dumps, 145 Acres, <1% of total
Acreage total of 147.5 Acres, <1% of Total Area

SMG 8 - Soil Mapping Units that are Variable and have no Defined Drainage Class with Severe Limitations Affecting Construction of Haul Roads and Log Landings

Dam, 9 Acres, <1% of total
SrF, Stony Land, Steep, 20433 Acres, 38% of total
Sw, Swamp, 53 Acres, <1% of total
W, Water, 374 Acres, 1% of total
Acreage total of 20868.4 Acres, 39% of Total Area

Table D.1: Map Symbols used in County Soil Survey for Savage River State Forest

Map Unit Symbol	Soil Name	Acres	Percent
AbB	Albrights silt loam, 0 to 8 percent slopes	43	0%
AbC2	Albrights silt loam, 8 to 15 percent slopes, moderately eroded	92.8	0%
AgC	Albrights very stony silt loam, 0 to 15 percent slopes	903.4	2%
An	Alluvial land	796.1	1%
Ao	Alluvial land, very stony	382.6	1%
Ar	Armagh silt loam	2.2	0%
At	Atkins silt loam	74	0%
BrA	Brinkerton and Andover silt loams, 0 to 3 percent slopes	46.8	0%
BrB	Brinkerton and Andover silt loams, 3 to 8 percent slopes	38.1	0%
BsC	Brinkerton and Andover very stony silt loams, 0 to 15 percent slopes	876.2	2%
CaC2	Calvin-Gilpin-Ungers channery loams, 10 to 20 percent slopes	188.3	0%
CaD2	Gilpin-Ungers channery loams, 20 to 35 percent slopes	257	0%
CaD3	Calvin-Gilpin-Ungers channery loams, 20 to 35 percent slopes, severely eroded	95.6	0%
CIE	Calvin and Lehew channery loams, 35 to 50 percent slopes	871.8	2%
CnC2	Calvin, Ungers, and Lehew channery loams, 10 to 20 percent slopes	1479.2	3%
CnD2	Calvin, Ungers, and Lehew channery loams, 20 to 35 percent slopes	698.4	1%
CnD3	Calvin, Ungers, and Lehew channery loams, 20 to 35 percent slopes severely eroded	265.3	0%
CoB	Cavode silt loam, 0 to 8 percent slopes	45.5	0%
CoC2	Cavode silt loam, 8 to 15 percent slopes, moderately eroded	47.2	0%
CrB	Clymer channery loam, 0 to 10 percent slopes	48.3	0%
CtB	Cookport channery loam, 0 to 8 percent slopes	11.9	0%
CtC2	Cookport channery loam, 8 to 15 percent slopes, moderately eroded	0.8	0%
CuB	Cookport and Ernest very stony silt loams, 0 to 8 percent slopes	2803.5	5%
CuD	Cookport and Ernest very stony silt loams, 8 to 25 percent slopes	2795.4	5%
Cv	Cut and fill land	3	0%

DAM	Dam	9.3	0%
DbB	Dekalb channery loam, 0 to 10 percent slopes	433.5	1%
DbC2	Dekalb channery loam, 10 to 20 percent slopes, moderately eroded	347.6	1%
DbD2	Dekalb channery loam, 20 to 35 percent slopes, moderately eroded	79.1	0%
DcC	Dekalb-Calvin-Lehew very stony loams, 0 to 15 percent slopes	870.1	2%
DcD	Dekalb-Calvin-Lehew very stony loams, 15 to 25 percent slopes	1946	4%
DgC	and Gilpin very stony loams, 0 to 15 percent slopes	2153	4%
DgD	Dekalb and Gilpin very stony loams, 15 to 25 percent slopes	3023.7	6%
DIC	Dekalb and Leetonia very stony sandy loams, 0 to 15 percent slopes	2192.1	4%
DID	Dekalb and Leetonia very stony sandy loams, 15 to 25 percent slopes	1928.4	4%
ErA	Ernest silt loam, 0 to 3 percent	13.1	0%
ErB	Ernest silt loam, 3 to 8 percent slopes	107.9	0%
ErC2	Ernest silt loam, 8 to 15 percent slopes, moderately eroded	105.8	0%
ErD2	Ernest silt loam, 15 to 30 percent slopes, moderately eroded	1.1	0%
GnB2	Gilpin channery silt loam, 0 to 10 percent slopes	502	1%
GnC2	Gilpin channery silt loam, 10 to 20 percent slopes	975.9	2%
GnD2	Gilpin channery silt loam, 20 to 35 percent slopes	289.8	1%
GnD3	Gilpin channery silt loam, 20 to 35 percent slopes severely eroded	22.3	0%
LaB	very stony loam, 0 to 8 percent slopes	27.7	0%
LaD	Laidig very stony loam, 8 to 25 percent slopes	197.1	0%
Ls	Lickdale very stony silt loam	1.5	0%
McB	Meckesville silt loam, 0 to 8 percent slopes	49.8	0%
McC2	Meckesville silt loam, 8 to 15 percent slopes, moderately eroded	71.5	0%
MdB	Meckesville very stony silt loam, 0 to 8 percent slopes	203.3	0%
MdD	Meckesville very stony silt loam, 8 to 25 percent slopes	605.2	1%
Ph	Philo silt loam	16.9	0%
SrF	Stony land, steep	20432.8	38%
St	Strip mines and dumps	144.5	0%
Sw	Swamp	52.6	0%

UcB	Ungers, Calvin, and Lehigh channery loams, 0 to 10 percent slopes	877	2%
UnB	Ungers-Gilpin-Calvin channery loams, 0 to 10 percent slopes	113.8	0%
VsD	Very stony land, rolling	2729.5	5%
VsF	Very stony land, steep	154.2	0%
W	Water	373.7	1%
WhB2	Wharton silt loam, 0 to 10 percent slopes	52.9	0%
WhC2	Wharton silt loam, 10 to 20 percent slopes,	27.4	0%

Appendix E

State Listed Species of Concern Documented on Savage River State Forest

Plants:

Climbing Fumitory, <i>Adlumia fungosa</i>	T
Porter's Reedgrass, <i>Calamagrostis porteri</i>	E
Wild Calla, <i>Calla palustris</i>	E
Long-stalked sedge, <i>Carex pedunculata</i>	E
Maple-leaved Goosefoot, <i>Chenopodium gigantospermum</i>	E
Standley's goosefoot, <i>Chenopodium standleyanum</i>	E
Purple Clematis, <i>Clematis occidentalis</i>	E
Yellow Clintonia, <i>Clintonia borealis</i>	T
Goldthread, <i>Coptis trifolia</i>	E
Bunchberry, <i>Cornus canadensis</i>	E
Fraser's Sedge, <i>Cymophyllus fraserianus</i>	E
Leatherwood, <i>Dirca palustris</i>	T
Stiff Gentian, <i>Gentianella quinquefolia</i>	E
Oak Fern, <i>Gymnocarpium dryopteris</i>	E
White-fruited Mountainrice, <i>Oryzopsis asperifolia</i>	T
Black-fruited Mountainrice, <i>Piptatherum racemosum</i>	T
Purple Fringeless Orchid, <i>Platanthera peramoena</i>	T
Large Purple Fringed Orchid, <i>Platanthera grandiflora</i>	T
Mountain goldenrod, <i>Solidago roanensis</i>	E
Rose Twisted-stalk, <i>Streptopus roseus</i>	T
American Yew, <i>Taxus canadensis</i>	T

Please Note: There are a number of rare plant species tracked by the Maryland Natural Heritage Program that are not officially State listed that occur on SRSF.

Animals:

Mollusks:

Squawfoot, <i>Strophilus undulatus</i>	I
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Crustaceans:

Franz's Cave Amphipod, <i>Stygobromus franzi</i>	I
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Insects (Odonata):

Superb Jewelwing, <i>Calopteryx amata</i>	I
Sable Clubtail, <i>Gomphus rogersi</i>	I
Spatterdock Darner, <i>Rhionaeschna mutata</i>	E

Insects (Coleoptera):

Northern Barrens Tiger Beetle, <i>Cicindela patruela</i>	E
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Insects (Lepidoptera):	
Pepper-and-salt Skipper, <i>Amblyscirtes hegon</i>	I
Frosted Elfin, <i>Callophrys irus</i>	E
Harris' Checkerspot, <i>Chlosyne harrisii</i>	T
Two-spotted Skipper, <i>Euphyes bimacula</i>	E
Compton Tortoiseshell, <i>Nymphalis vau-album</i>	E
Amphibians:	
Wehrle's Salamander, <i>Plethodon wehrlei</i>	I
Mountain Chorus Frog, <i>Pseudacris brachyphona</i>	E
Birds:	
Northern Goshawk, <i>Accipiter gentilis</i>	E
Henslow's Sparrow, <i>Ammodramus henslowii</i>	T
Blackburnian warbler, <i>Dendroica fusca</i>	T
Alder Flycatcher, <i>Empidonax alnorum</i>	I
Nashville warbler, <i>Vermivora ruficapilla</i>	I
Mammals:	
Porcupine, <i>Erethizon dorsatum</i>	I
Bobcat, <i>Lynx rufus</i>	I
Least Weasel, <i>Mustela nivalis</i>	I
Eastern Small-footed Bat, <i>Myotis leibii</i>	E
Allegheny Woodrat, <i>Neotoma magister</i>	E
Long-tailed Shrew, <i>Sorex dispar</i>	I
Smoky Shrew, <i>Sorex fumeus</i>	I
Southern Water shrew, <i>Sorex palustris punctulatus</i>	E
Appalachian Cottontail, <i>Sylvilagus obscurus</i>	I

Please Note: There are a number of rare animal species tracked by the Maryland Natural Heritage Program that are not officially State listed that occur on SRSF.

I = In Need of Conservation (designation for animals only)

T = Threatened

E = Endangered

Appendix F

EFFECTIVE: JULY 19, 2005
OPERATION ORDER 2005-601 ANNAPOLIS, MARYLAND

Policy for SFI Management Review & Continual Improvement

Objective

This order establishes the Maryland Department of Natural Resources Forest Service policy for a management review system to examine findings and progress in implementing the Sustainable Forest Initiative (SFI) Standard on those lands subject to the Standard, to make appropriate improvements in programs, and to inform employees of changes.

Overview

The Sustainable Forest Initiative Standard Objective 13 requires landowners with lands subject to the Standard to promote continual improvement in the practice of sustainable forestry and monitor, measure, and report performance in achieving the commitment to sustainable forestry.

Therefore:

1. Biannual reports will be filed by the State Forest manager (with input by the management contractor, if applicable) to the State Forester on progress of meeting SFI requirements, status of Corrective Action Requests (CAR), and suggested opportunities for continual improvement. The first report will be due within 60 days after the Sustainable Forest Initiative annual audit and the second report about six months after that.
2. A summary of the biannual reports will be posted on the DNR Forest Service website and optionally other appropriate public outlets.
3. A meeting will be held annually to report on the progress of meeting SFI requirements, CAR status, opportunities for continual improvement on meeting SFI requirements and for the adjustment and establishment of new SFI implementation goals. This will require attendance by the forest manager, management contractor (if applicable), State Forester and appropriate staff. This meeting should be in conjunction with the release of the second report and coordinated by State Forest manager, contractor (if applicable) and State Forester.
4. This policy shall be included as a requirement in the agreement with any forest management contractors with DNR Forest Service the requirement to fulfill the above written policy conditions.

Steven W. Koehn, Director / State Forester

Appendix G

Glossary

BIOLOGICAL DIVERSITY - The variety of life forms in a given area. Diversity can be categorized in terms of the number of species, the variety in the area's plant and animal communities, the genetic variability of the animals, or a combination of these elements.

BUFFER STRIP - A narrow zone or strip of land, trees, or vegetation bordering an area. Common examples include visual buffers, which screen the view along roads, and streamside buffers, which are used to protect water quality. Buffers may also be used to prevent the spread of forest pests.

DOMINANT [CO-DOMINANT]: The overstory life form or species in a plant community which contributes the most cover or basal area to the community, compared to other life form or species.

ECOLOGICAL TYPE (Habitat Type): A category of land having a unique combination of potential natural community; soil, landscape features, climate, and differing from other ecological types in its ability to produce vegetation and respond to management. Classes of ecological types include all sites that have this

ECOSYSTEM/COVER TYPE: The native vegetation ecological community considered together with non-living factors of the environment as a unit and, the general cover type occupying the greatest percent of the stand location. Based on tree or plant species forming a plurality of the stocking within the stand. May be observed in the field or computed from plot measurements.

INTERIOR FOREST: Habitat necessary for insulation from edge effects (e.g., noise, wind, sun, predation) which occurs within the interior of a patch.

LANDSCAPE LEVEL PLANNING: Planning of the distribution patterns of communities and ecosystems, the processes that affect those patterns, and changes in pattern and process over time.

LAND USE CLASS: The predominant purpose for which an area is employed. Classes include Agricultural Land, Forest land, Rangeland, Wetland, Urban/suburban, and Utility/Transportation Corridors (Roads, Railroads, and Utility Corridors).

OLD GROWTH ECOSYSTEM FUNCTIONALITY: The ability of an ecosystem to produce the attributes and perform the continued operation of the plant and animal communities in an area together with the non-living physical environment that supports them. Functional Old Growth Ecosystems have physically defined boundaries, but they are also dynamic: their boundaries and constituents can change over time. They can import and export materials and energy and thus can interact with and influence other ecosystems. They can also vary widely in size.

Extended Rotation: Forest stands for which the harvest age is increased beyond the optimum economic harvest age [e.g., increasing the harvest age of an oak stand from 80-100 years (i.e., the "normal" economic harvest age for oak on most sites) to 150 or more years] to provide larger trees, wildlife habitat, and other non-timber values.

OLD GROWTH NETWORK / MANAGEMENT COMPLEX: interrelated areas of Old Growth that import and export materials and energy and interact with and influence each other as ecosystems.

SHADE-INTOLERANT TREES - Trees that cannot thrive in the shade of larger trees.

STAND AGE: The mean age of the dominant and co-dominant trees in the stand.

STAND CONDITION: A classification of forest stands based upon the age of maturity and structure of the overstory and understory.

- **Old-Growth Stands**: Ecosystems distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development which typically differ from earlier stages in a variety of characteristics that may include tree size, accumulations of large dead

woody material, number of canopy layers, species composition, and ecosystem function. The age at which old growth develops and the specific structural attributes that characterize old growth will vary widely according to forest type, climate, site conditions and disturbance regime. For example, old growth in fire-dependent forest types may not differ from younger forests in the number of canopy layers or accumulation of down woody material. However, old growth is typically distinguished from younger growth by several of the following structural attributes:

- Large trees for species and site.
 - Wide variation in tree sizes and spacing.
 - Accumulations of large-size dead standing and fallen trees that are high relative to earlier stages.
 - Decadence in the form of broken or deformed tops or bole and root decay.
 - Multiple canopy layers.
 - Canopy gaps and understory patchiness.
- Young-Growth Stand: Any forested stand not meeting the definition of old growth.

STRUCTURAL COMPLEXITY ENHANCEMENT: Silvicultural practices that promote old-growth structural characteristics such as multi-layered canopies, elevated large snag and downed log densities, variable horizontal density, and a greater proportion of tree basal area in large diameter classes.

Appendix H

Savage River State Forest – Modeling Long-term Sustainability

Criteria used in this 100 year model run:

- Maximum age
 - Mixed Oak - 250
 - Northern Hardwood - 250
 - Cove Hardwood - 200
 - Hemlock – 300
 - Plantations - 150
 - Red Maple - 150
 - All other types - 250
- Yields/returns derived from year 2000 CFI data
- Harvests
 - Thinning
 - Mixed Oak – Age 35-60, no activity after thinning for 20 years
 - Northern Hardwood – Age 35-60, no activity after thinning for 20 years
 - Variable Retention Harvest
 - Mixed Oak – Age 80-150 (with or without thinning)
 - Northern Hardwood – Age 80-150 (with or without thinning)
- Death
 - All stands reset to age zero with the same cover type
- Model maximizes total dollar return over entire model run
- Constraints
 - Total harvest area cannot exceed 2500 acres per year
 - Total Thin area cannot exceed 2000 acres per year
 - Total Variable Retention area cannot exceed 1500 acres per year
 - Even flow constraints
 - Total volume harvested cannot change from the maximum by more than 40%
 - No restriction on total thin area change
 - Total variable retention level cannot change more than 25% from max
 - Total standing inventory cannot change by more than 25% from the max

The following forest modeling graphs are derived from the current database for Savage River State Forest as of March 2011. The forest modeling projections below are estimates on what can be expected to occur over a 100 year time frame.

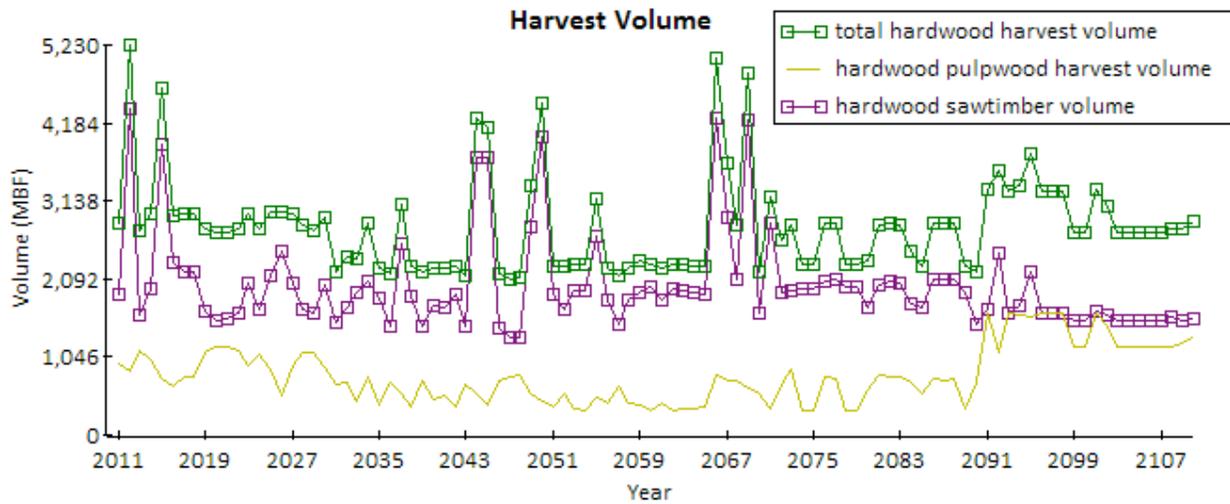


Figure H.1: Estimated Harvest Volume on SRSF based on 100 year projection.

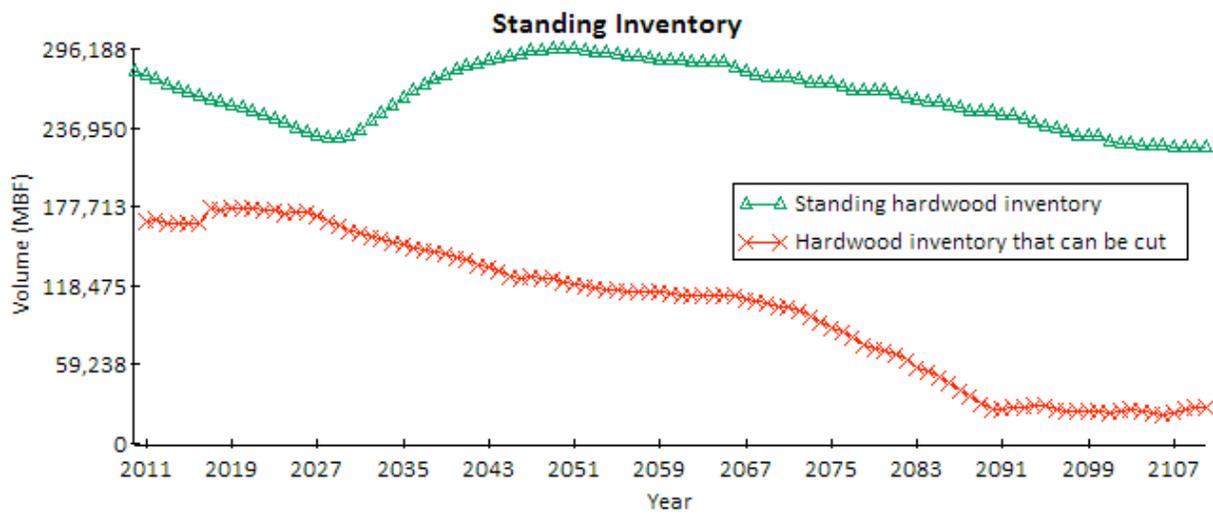


Figure H.2: Standing Inventory on SRSF based on a 100 year projection.



Figure H.3: Size Class Area in Acres on SRSF over 100 year projection.

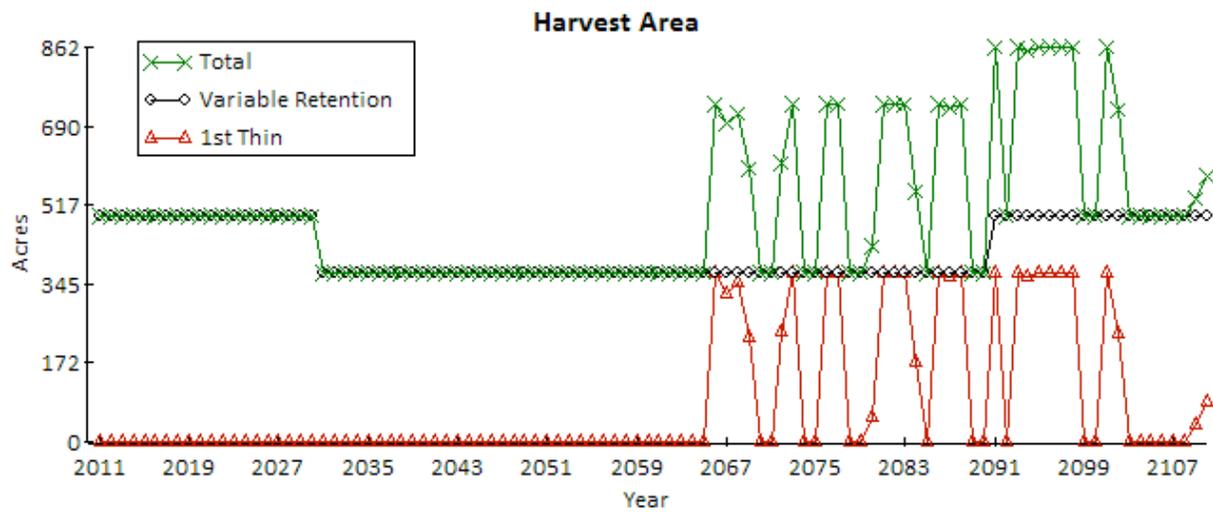


Figure H.4: Estimated Available Harvest Acres for Various Harvest Methods over a 100 year period.

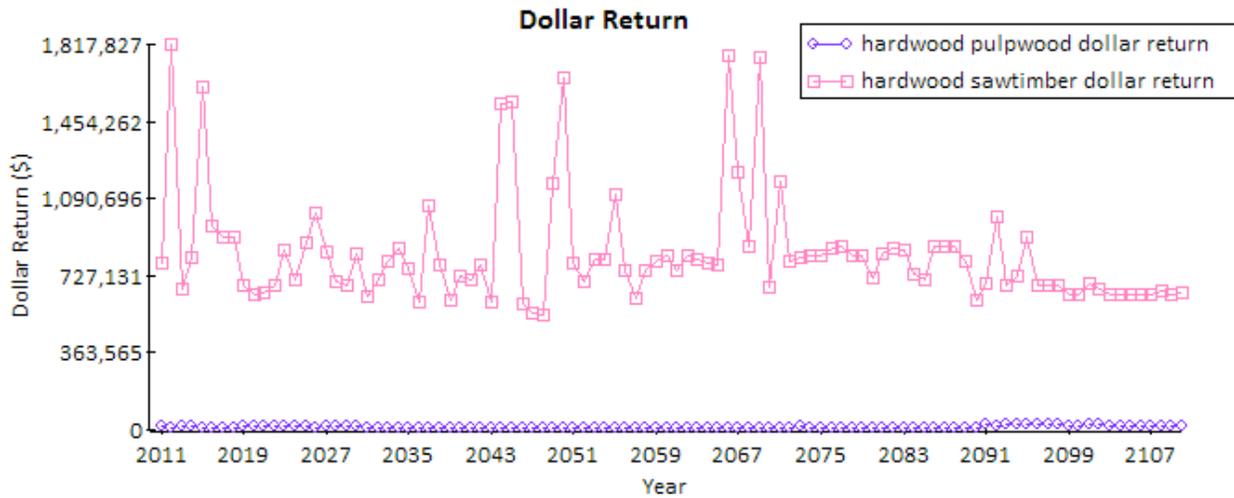


Figure H.5: Estimated Revenue projections from various Harvest Types, 100 year period.

The annual growth rate on the forest based on our continuous forest inventory from 2000 is 12.9 mmBF. The breakdown by forest zones (used at that time) are as follows:

General Zone	6.5 mmBF
Special Zone	1.4 mmBF
Water Influence Zone	4.1 mmBF
Recreation Zone	0.1 mmBF
Wildland Zone	0.8 mmBF

The average annual harvest rate in the general zone since 2000 is 2.3 mmBF. The annual harvest rates since 2000 are as follows:

2001	2.7 mmBF
2002	2.6 mmBF
2003	1.9 mmBF
2004	3.6 mmBF
2005	3.4 mmBF
2006	2.8 mmBF
2007	2.6 mmBF
2008	1.0 mmBF
2009	1.7 mmBF
2010	0.8 mmBF

The target for the next 5 years is not to exceed the annual growth rate in our harvests. In five years we expect the stand level inventory to be completed. At which point a new annual growth rate will be calculated and our harvest target will change.