

**Update to the
2012 Washington State Legislature
on DNR's Forest Biomass Initiative:**

Bioaviation Fuel Production from Residual Woody Biomass



December 1, 2011





Peter Goldmark
Washington State
Commissioner of Public Lands

December 1, 2011

Washington State Senate
PO Box 40482
Olympia, WA 98504

Washington State House of Representatives
PO Box 40600
Olympia, WA 98504

Dear Legislators:

Shortly after I assumed duties as the Commissioner of Public Lands, I initiated a Forest Biomass Initiative at the Department of Natural Resources (DNR) to demonstrate the utility of forest biomass as a feedstock for sustainable heat, energy, and fuel production. Over the last three years, we have passed three pieces of legislation that have helped create rural jobs, generate income for Washington's trust beneficiaries, and provide DNR with authority to move forward, in collaboration with our partners, with a bioaviation fuel pilot project.

In addition to the work we have done together to ensure that residual forest biomass utilization in Washington is both economically and environmentally sustainable, I have secured funding from the United States Forest Service to conduct a statewide sustainable forest biomass supply assessment. Additionally, with the support of the Forest Practices Board, I convened a workgroup that is evaluating the efficacy of the existing Forest Practices rules in light of an emerging forest biomass sector.

The 2011 Washington State Legislature directed the Department of Natural Resources to:

(2) ...Provide a report to the governor and the appropriate committees of the legislature:

(a) By December 1, 2011, regarding all of its activities pertaining to forest biomass to aviation fuel, including expenditures and revenue sources;

(b) By December 1, 2011, and December 1, 2012, with a summary of research activities, scientific reports, and pilot projects pertaining to forest biomass to aviation fuel by state research institutions, including the status of ongoing activities and summaries of the findings with their implications for management of forest trust lands;

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(c) By December 1, 2011, and December 1, 2012, on the progress of the forest practices board's forest biomass policy work group's consideration of the science, policy, available technologies, and best management practices related to forest biomass harvest, including final recommendations to the forest practices board.

2011 SHB 1422 Sec. 2 (2)

The attached report provides an update on these efforts. Please do not hesitate to contact me should you have questions or concerns about this report.

Sincerely,



Peter Goldmark
Commissioner of Public Lands

Enclosure

c: Senator Sharon Nelson, Chair, Senate Environment
Senator Doug Eriksen, Ranking Minority, Senate Environment
Senator Kevin Ranker, Chair, Energy, Senate Natural Resources & Marine Waters
Senator Bob Morton, Ranking Minority, Senate Energy, Natural Resources & Marine Waters
Representative Brian Blake, Chair, House Agriculture and Natural Resources
Representative J.T. Wilcox, Ranking Minority, House Agriculture and Natural Resources
Representative John McCoy, Chair, Technology, House Energy and Communications
Representative Larry Crouse, Ranking Minority, House Energy and Communications
Senator James Hargrove
Senator Karen Fraser
Jan Odano, Committee Coordinator, Senate Environment
Curt Gavigan, Committee Coordinator, Senate Energy, Natural Resources & Marine Waters
Jason Callahan, Committee Counsel, House Agriculture and Natural Resources
Kara Durbin, Committee Counsel, House Technology, Energy and Communications

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Washington State Department of Natural Resources

The Washington State Department of Natural Resources (DNR) was asked to provide the Washington State Legislature with an update on all activities related to the department's biomass-to-aviation fuel efforts by December 1, 2011. This includes current research endeavors, as well as the ongoing evaluation of the adequacy of forest practices rules in addressing the impacts a forest biomass sector might have on public resources (SHB 1422).

This report follows up on two other bills passed in previous legislative sessions: one that authorized DNR to move forward with biomass-to-energy pilot projects (HB 2164) and one that authorized the department to transact biomass from state lands, and enter into long-term contracts for biomass from state-managed trust lands (SHB 2481). This report follows up on the report delivered to the 2011 Legislature. The report can be found online at: http://www.dnr.wa.gov/Publications/em_biomass_leg_rprt_2011.pdf.

DNR's analysis continues to indicate that a sustainable forest biomass based renewable energy and fuel sector can emerge in Washington State consistent with the following values:

1. *Appropriate Scale.* Facilities should be sited only where sufficient forest biomass is available and does not interfere with existing sustainable uses.
2. *Maximum Efficiency.* Processing technologies should extract the greatest energy value from the forest biomass. The department is supportive of existing efforts in Washington to encourage facility efficiency.
3. *Ideal Location.* Opportunities should be sought to site facilities in regions that lack forest product processing infrastructure and are challenged by declining forest health. Facilities should also be located close to adequate supplies of forest biomass, with access to energy infrastructure, and where rural economic benefits can be realized.

Residual Forest Biomass to Aviation Fuel

DNR was authorized, through SHB 1422, to work with the Department of Commerce and the state's research institutions on a bioaviation fuel pilot project in order to demonstrate the utility of forest biomass as a bioaviation fuel feedstock. This bill was an outgrowth of work done through the Sustainable Aviation Fuels Northwest (SAFN) effort on which DNR played a prominent role. The final SAFN report identified a pilot-scale demonstration project as a fundamental next step to realizing the efficient production of bioaviation fuel from residual forest biomass. The report can be found online: <http://www.safnw.com/sustainable-aviations-fuels-bibliography/>.

Prior to initiating a pilot-scale bioaviation fuel project, the department wanted to both ensure necessary sustainability assurances were in place through the completion of two substantial research efforts underway by DNR and identify a path to collaborate with the two major

USDA funded research efforts that the University of Washington and Washington State University are initiating.

DNR has continued its work on the Washington Forest Biomass Supply Assessment and the Forest Practices Biomass Work Group (both described later in this report). The outcomes of these research efforts will provide information necessary to ensure that all biomass-to-bioaviation fuel efforts initiated in the state are sustainable. At this time the department has neither expended any resources toward nor generated revenue from a demonstration bioaviation fuel project.

In addition to awaiting results from these efforts, the department wanted to be certain before moving forward that its actions toward initiating a bioaviation fuel pilot project were supportive of the two \$40 million research efforts recently announced by the University of Washington and Washington State University. DNR, as directed in SHB 1422, will support the work of both of these projects.

\$80M USDA Grants to Washington's Universities

In the fall of 2011, the University of Washington and Washington State University were granted \$40 million from the United States Department of Agriculture to study technologies, market conditions, and feedstock availability of transforming woody materials into jet fuel. Each \$40 million grant supports two unique consortiums, each comprised of regional research institutions, industry, technology producers, feedstock suppliers, and others. DNR will support these efforts to help assure that Washington State is an international leader in sustainable bioaviation fuel production. Brief descriptions of each of these efforts follow.

Northwest Advanced Renewables Alliance (NARA): Washington State University is the Lead Institution

The Pacific Northwest is well positioned to deliver such bio-based aviation fuels and chemicals within five years because of established oil refining and distribution assets, a high need for military and commercial aviation fuels, and abundant woody biomass currently at appropriate scale.

Northwest Advanced Renewables Alliance (NARA): A New Vista for Green Fuels, Chemicals, and Environmentally Preferred Products (EPPs) was created to develop regional sustainable solutions for aviation fuel and key petrochemical replacements from sustainable woody-based resources in the Pacific Northwest. It is envisaged that NARA will serve as a national model in this regard with its game-changing approaches.

In addressing this regional and national challenge, NARA links all of the major research institutions in the Pacific Northwest (Washington State University, University of Washington, Oregon State University, University of Idaho, University of Montana, Montana State University) and tribal colleges, with industrial partners (Weyerhaeuser and Gevo) and various federal laboratories (USDA Forest Service).

NARA's approach involves developing feedstock, sustainable forest/ plantation production, and new methodologies to identify the most promising plant lines/forest residuals and their

subsequent conversions into aviation fuel/petrochemicals at an appropriate scale and cost. A significant effort will also be directed towards training the next generation of the leaders and workers needed for this emerging green economy.

Objectives: The objectives of the Northwest Advanced Renewables Alliance (NARA) are to:

- (1) Develop and improve Douglas-fir/Western red hemlock and poplar/red alder for aviation fuel and bioproduct production;
- (2) Assess availability and cost to supply the fuels and chemical industry with minimal environmental burdens;
- (3) Develop harvesting and transportation schemes to deliver feedstocks to market;
- (4) Provide state-of-the-art assessments of the social, environmental, and economic impacts; and
- (5) Develop comprehensive biofuels literacy with citizens from the K-12 through university level, and move them into the workforce.

This highly integrated effort will evaluate sustainable forestry techniques and logistics to produce and move wood materials from the forest to a processing facility. These forest treatments and removal of biomass will be evaluated using a series of environmental metrics to assess their long-term impact on the ecosystems. Additionally, for longer term objectives, the team will evaluate the potential of various hardwood lines for plantation culture and as starting materials for aviation fuel and polymer replacements.

Multiple value streams from lignin residues will also be developed to support the economics of biofuels production. With the industrial team led by feedstock experts at Weyerhaeuser and biofuels producer Gevo, other anticipated outputs are on a five-year track to assess commercial viability of producing bioaviation fuels and co-products.

The social science/outreach team will additionally engage communities and stakeholders to examine perceptions and needs of these groups in developing a sustainable supply chain. Product attributes necessary to increase market share and value for our products will be evaluated and connected with technical components of the research.

Participating Organizations:

Washington State University (Lead Institution)
Gevo, Inc.
Facing the Future
Forest Service - Forest Products Lab
Greenwood Resources
Montana State University
National Center for Genome Resources
Oregon State University
Pacific Northwest Research Station, USDA-FS
Penn State University
Salish Kootenai College
University of Idaho
University of Minnesota
University of Montana
University of Washington
Weyerhaeuser

System for Advanced Biofuels Production from Woody Biomass in the Pacific Northwest: University of Washington is the Lead Agency

The overall goal of this project is to prepare the Pacific Northwest for a 2015 introduction of an infrastructure-compatible biofuels industry that meets the region's share of Renewable Fuels Standard 2 (RFS2) targets using sustainable and regionally appropriate woody energy crops. The effort will support the revitalization of the region's forestry industry with establishment of a sustainable advanced biofuels industry that supports large and small growers and brings jobs to rural communities. The project proposes a three-prong integrated program of research, extension, and education with the following medium term outcomes:

Research. Mitigate technology risks along the entire supply chain so that an advanced biofuels industry, which uses purpose-grown woody energy crops and makes significant contributions towards RFS2 targets, can be built in the Pacific Northwest.

Extension. Build a critical mass of competent small- and medium-size growers to provide the industry with a supply of purpose-grown woody energy crops, and address the needs and concerns of stakeholders that will be impacted by an advanced biofuels industry in the Pacific Northwest.

Education. Build a critical mass of well-trained workers capable of filling the cross-disciplinary needs of the industry. The entire supply chain, from feedstock production through distribution to consumers, will be demonstrated. Extension and education programs will be established to deliver science-based knowledge to allow stakeholders to make informed decisions.

The proposed program addresses the following four USDA Agriculture and Food Research (AFRI) Priority Areas:

- 1) Plant Health and Production and Plant Products;
- 2) Renewable Energy, Natural Resources, and Environment;
- 3) Agriculture Systems and Technology; and,
- 4) Agriculture Economics and Rural Communities.

Participating organizations:

University Of Washington (Lead institution)
Greenwood Resources, Inc.
Zeachem Inc.
Washington State University Extension
Agriculture Center Of Excellence
Oregon State University
University Of California-Davis

Washington Forest Biomass Supply Assessment

In early 2010, Washington State Commissioner of Public Lands, Peter Goldmark and Washington's State Forester, Aaron Everett, secured a \$1 million grant from the United States Forest Service to conduct a statewide assessment of residual forest biomass availability and to do much-needed fuel reduction/forest health treatments in Eastern Washington.

The department contracted with the University of Washington and TSS Consultants to conduct the research. Starting in November 2010, the study team completed the study, which integrates various data sets, landowner and operator interviews, and a comprehensive literature review on ecological impacts of biomass removal. The study, when complete, will be found on the DNR website at:

http://www.dnr.wa.gov/ResearchScience/Topics/OtherConservationInformation/Pages/em_biomass.aspx

Preliminary results indicate that, of the several million bone-dry tons (BDT) of woody biomass generated in 2010 by current timber harvest operations in Washington, only 16 to 25 percent entered the marketplace. Given existing economic and geographic constraints, more than twice that amount could readily be made available for bioenergy projects. The balance is left at the landing or scattered in harvest areas and is available to support forest ecosystem functions. This, of course, is in addition to the existing shrubs and biomass that was on the ground prior to the timber harvest. Larger volumes of biomass may become available as technologies improve and markets grow. DNR is evaluating existing Forest Practices rules to ensure adequate resource protection. The study will be complete by the end of the year.

Forest Practices Biomass Workgroup

Concurrent to the statewide biomass supply assessment, in May 2011, the Washington Forest Practices Board adopted a change to the Forest Practices rules, which govern forest practices on 12 million acres of non-federal land in Washington, to include "forest biomass" in the definition of a regulated forest practice:

"Forest practice" means any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber or forest biomass, including but not limited to:

- Road and trail construction;
- Harvesting, final and intermediate;
- Precommercial thinning;
- Reforestation;
- Fertilization;
- Prevention and suppression of diseases and insects;
- Salvage of trees; and
- Brush control.

"Forest practice" shall not include: Forest species seed orchard operations and intensive forest nursery operations; or preparatory work such as tree marking, surveying and road flagging; or removal or harvest of incidental vegetation from

Update to the 2012 Washington State Legislature on DNR's Forest Biomass Initiative

forest lands such as berries, ferns, greenery, mistletoe, herbs, mushrooms, and other products which cannot normally be expected to result in damage to forest soils, timber or public resources. (WAC 222-16)

As a result of this rule change, the harvest and collection of forest biomass must comply with all existing Forest Practices Rules. Questions have been posed as to whether the existing forest practices rules are sufficient in their current form to ensure that biomass harvest and collection, at present and future-projected levels, will not negatively affect the productivity of working forests in Washington or harm public resources, including fish and wildlife habitat and waters of the state, considering for example, erosion control.

To respond to these concerns, the Forest Practices Board, in May 2011, requested that a multi-stakeholder group be convened to evaluate the efficacy of the existing Forest Practice Rules to protect Washington's working forest land base in the context of the harvest and collection of residual forest biomass.

The charge of the Forest Practices Biomass Work Group is to determine whether the existing Forest Practices Rules are sufficient, or if additional changes to the rules are necessary to protect the state's valuable public resources.

The group was asked to evaluate the latest science related to the effects of biomass collection on forest ecosystem functions and ecological sustainability, gain a deeper understanding of best management practices (BMP's) for biomass collection being implemented in other parts of the country, and bring to the Forest Practices Board its recommendations.

A group comprised of representatives of the following organizations was convened to do this work:

Department of Natural Resources	Washington Forest Protection Association
NOAA Fisheries	Northwest Indian Fisheries Commission
Department of Ecology	Biomass Facility Operators
Conservation Caucus	Biomass Collection Operators
Washington Dept. of Fish & Wildlife	Washington Farm Forestry Association

A Charter was approved on June 30, 2011, that describes the group's purpose as (Attachment A):

“Educate ourselves on the science/policy and available technologies related to biomass harvest, the Forest Practices rules that apply to such harvest and biomass harvest BMP's. Discuss and determine if specific BMP's and/or Forest Practices rule and/or rule revisions related to biomass harvest are needed in Washington. If so, identify a path toward identifying what is needed.”

The group developed a work plan that was designed to ensure all relevant issues are evaluated to the satisfaction of participants and contain a strategy for evaluating each topic (Attachment B).

Work group members hear presentations about the coverage of current Forest Practices rules and about forest biomass BMP's used in other parts of the country. Members prepare and give presentations about:

- Soil Health and Productivity;
- Silviculture;
- Roads;
- Disturbance (Pest, Disease, Fire);
- Conversion;
- Dead Wood, Slash Disposal, and Carbon Storage;
- Water Quality, Riparian Zones/Unstable Slopes, and Water Infiltration; and
- Wildlife, Biodiversity, and Cultural Resources.

A separate meeting devoted to each topic is preceded by gathering and sharing what group members believe to be the most relevant scientific reports, journal articles, and research papers. No comprehensive literature review has been attempted, although some workgroup members believe that should be included as it would be very useful in the near future, particularly pertaining to the restoration or sustainability of ecological functions referred to in SHB 2481.

The legislature finds that the utilization of forest biomass materials located on state lands will assist in achieving the purposes of the forest biomass energy demonstration project under RCW 43.30.835, facilitate and support the emerging forest biomass market and clean energy economy, and enable the department to encourage biomass energy development on state trust lands for the trust land's potential long-term benefits to trust beneficiaries. The legislature finds that biomass utilization on state forest lands must be accomplished in a manner that retains organic components of the forest necessary to restore or sustain forest ecological functions (SHB 2481).

Topics that emerge from each meeting as needing more attention later in the process are 'flagged.' These are the items that the group will return to for further discussion when developing recommendations to the Forest Practices Board.

The topics that have yet to be addressed include Carbon Storage, Water Quality, Riparian Zones and Unstable Slopes, Water Infiltration, Wildlife, Biodiversity and Cultural Resources.

To date, the group has determined several topics are sufficiently covered by existing Forest Practices rules. Several more topics are awaiting final conclusions until the work group can tour Eastside forests (see below), while other topics have been 'flagged' for further discussion.

In addition, two field tours have been conducted to look at biomass harvest operations, and more tours are planned, including one to a site where biomass may have been harvested too aggressively.

During the first field tour, the group visited biomass collection activities occurring on DNR-managed state trust lands where the group was able to see the newest advancements in

Update to the 2012 Washington State Legislature on DNR's Forest Biomass Initiative

technology for biomass removal, including chippers and hauling equipment. During that first tour, the group also visited a site where biomass had already been removed (on Merrill and Ring property). During the second field tour, to a site near Matlock, the group observed impacts to long term soil productivity and resulting vegetative responses from varying levels of biomass removal.



Photos of a DNR-managed sale. Left: slash piles brought to a landing. Center and right: How slash is often processed to be transported from the site.



Photos of a biomass harvest on Merrill and Ring property. Left and center: Examples of a forest health treatment. Right: an example of what remains on site after biomass has been collected on a steep slope.



Photos of the Matlock site visited on the work group's second field tour. The site shows different rates of regeneration and species composition after different degrees of biomass harvest.

The Forest Practices Biomass Work Group hopes to bring recommendations to the Forest Practices Board at the board's May 2012 meeting. All meeting agendas, notes, and resources can be found on the DNR website:

http://www.dnr.wa.gov/ResearchScience/Topics/OtherConservationInformation/Pages/em_forest_practices_biomass_work_group.aspx.

Outcomes of this effort, the Washington Forest Biomass Supply Study, and DNR's efforts toward a sustainable bioaviation fuel pilot project will follow in the December 1, 2012, report that will be delivered to the legislature next year.

Attachments:

- A. Forest Practices Biomass Work Group Charter
- B. Forest Practices Biomass Work Group Work Plan

**Forest Biomass Policy Work Group Charter
June 30, 2011**

I. Introduction

The Forest Practices Board (board) has initiated rule-making to add “forest biomass” to the list of activities “conducted on or directly pertaining to forest land and related to growing, harvesting, or processing timber” to the forest practice definition in WAC 222-16-010. During stakeholder discussion before the board initiated rule-making, concerns were expressed regarding the potential need for specific best management practices (BMPs) and/or Forest Practices Regulations (FPR) related to biomass harvest. At the November 2010 Forest Practices Board meeting, Commissioner Goldmark made a commitment to convene a meeting of interested stakeholders to initiate a dialog about how to ensure biomass harvest from forestlands is ecologically protective and sustainable.

A kick-off meeting was held on January 31, 2011 to gain clear understanding of specific concerns about forest biomass harvest under existing forest practices rules; to develop a plan for “next steps” by the group; and determine the need for a review of potential impacts to Washington forests from the collection of biomass.

II. Membership/Purpose/Tasks/Deliverables/Process

Caucus Membership

Membership is self-selecting representing, at a minimum, the caucuses listed below. Meetings are open to the public and any member of any caucus is invited to participate.

DNR Regulatory (chair)	WFPA
NWIFC	NOAA Fisheries
DOE	Biomass Facility Operators
Conservation Caucus	Biomass Collection Operators
DOE	DNR State Lands
DFW	

Purpose

Educate ourselves on the science/policy and available technologies related to biomass harvest, the Forest Practices rules that apply to such harvest and biomass harvest BMPs. Discuss and determine if specific BMPs and/or Forest Practices rules and/or rule revisions related to biomass harvest are needed in WA. If so, identify a path toward identifying what is needed.

Tasks & Responsibilities

1. Develop and agree upon a group Charter
2. Continue collaborative dialog and bring in additional perspectives
3. Gather, circulate and become familiar with scientific literature available on the topic
4. Conduct a tour of operations and/or hold a science day to educate ourselves
5. Evaluate the level of protection current Forest Practices rules provide, by monitoring activities and results on the ground
6. Determine if additional biomass specific BMPs and/or Forest Practices rules are needed and, if so, what should they be

Forest Biomass Policy Work Group Charter
June 30, 2011

7. Deliver recommendations to the board about BMP's, Forest Practice rules, or other paths forward

Deliverables

1. Charter
2. Regular status reports to the board
3. Final recommendations to the board
4. Supporting documentation/data

Group Process, Reporting, and Support

1. Stakeholders of the Forest Biomass Policy Work Group are primary participants; caucus technical/operational staff may participate when called upon by this Policy Work Group
2. Consensus decision making; if not possible describe, in the final recommendations/report to the board, those areas where consensus could not be reached.
3. Regular status reports to the board
4. Schedule meetings to occur every month
5. Designate recorder for each meeting

Ground Rules

See attached

III. Timeline

The first Forest Biomass Policy Work Group meeting was January 31, 2011; subsequent meetings will be scheduled approximately every month with the goal of completing this work by May 2012, but no later than August 2012. Accomplishing assigned tasks between meetings, punctual attendance, and being prepared for meetings will facilitate regular progress towards meeting this goal.

Forest Biomass Policy Work Group Charter

June 30, 2011

Ground Rules

1. All participants bring with them the legitimate purposes and goals of their organizations. All parties recognize the legitimacy of the goals of others and assume that their goals will also be respected. The work group will try to maximize all the goals of the parties as far as possible.
2. This effort will receive priority attention, staffing and time commitments. Participants agree to spend the time in preparation for meetings, arrive in a timely manner, and be mindful of allotted time.
3. Participants will give the same priority to solving the problems of others as their own.
4. Participants commit to search for opportunities, creativity is essential for successful outcomes.
5. Participants commit to listen carefully, ask questions to understand, and make statements to explain or educate.
6. All issues within the scope of the charter identified by any party must be addressed by the whole team.
7. Participants commit to attempt to reach consensus on recommendations.
8. Participants commit to be an advocate for agreed on recommendations.
9. Participants commit to respect each other with constituencies and general public.
10. Caucuses should be mindful of how appointed participants are perceived by other caucuses - this is a collaborative effort. Each participant should demonstrate a genuine commitment to problem solving and mutual respect among all the caucuses. Each caucus will ensure that their participants respect these principles.
11. Anyone may leave the process and the ground rules listed above, but only after telling the entire work group why and seeing if the problem(s) can be addressed by the work group.
12. All communications with news media concerning these discussions will be by agreement of the full work group. Everyone will be mindful of the impacts their public and private comments on related topics will have on the climate of this work group's effort.
13. All of the participants accept the responsibility to keep their constituencies informed of the progress of the discussion.
14. Participants commit to adhere to these ground rules and hold each other to them.

Forest Practices and Biomass Harvest Workgroup 2011/12 Timeline & Strategy

June 9, 2011; 2 hours

Purpose:

- Review Timeline & Strategy proposal and arrive at consensus on timeline, process, content, and potential outcomes.

June 30, 2011; 4 hours

Washington's Forest Practice Rules

Purpose:

- Forest Practices Program staff will provide an overview of Washington's Forest Practice rules and how biomass harvest is impacted by them.

Who: Forest Practice staff to provide overview of rules. In particular, the following sections: Chapter 222-10 WAC, Chapter 222-16 WAC, Chapter 222-21 WAC, Chapter 222-22 WAC, Chapter 222-23 WAC, Chapter 222-24 WAC, Chapter 222-30 WAC, Chapter 222-34 WAC, Chapter 222-46 WAC.

July 28, 2011; 8 hours

Olympic Peninsula Biomass Tour

Purpose:

- Watch biomass collection in Western Washington in action. Group will tour several biomass harvest operations (before, during, after). See how Forest Practice rules are being implemented on the ground.

Who: DNR will arrange tours and provide participants with information on meeting time/place. Please plan on an entire day for the tours.

August 19, 2011; 4 hours

Best Management Practices/Resource Considerations/Field Tour Debrief

Purpose:

- Gain a deeper understanding of existing biomass harvest BMP's. Learn about the details of these standards/guidelines.

Who: Representatives from the Environmental Caucus lead with support from Tribes, WDFW, and other interested stakeholders to present to DNR BMP's for biomass harvest and identify BMP's that they believe are sufficient to maintain ecological health.

September 19, 2011; 8 hours

Soil Health and Productivity (Matlock Field Trip)

Purpose:

- Compare Washington's Forest Practice Rules [WAC 222-30-020, and others] to the BMP's (presented in September meeting) related to soil health and productivity (nutrients, soil compaction, litter removal).
- Discuss whether changes related to soil health and productivity are needed in Washington's Forest Practice Rules.

- If yes, identify what rule changes or other solutions can be implemented to address deficiencies.
- If 'no,' resolve, as a group, that Washington's Forest Practice rules are sufficient in this area.

Silviculture/Roads

Purpose:

- Compare Washington's Forest Practice rules [Chapter 222-20 WAC, Chapter 222-34 WAC, WAC 222-30-021, WAC 222-30-080, WAC 222-30-020, WAC 222-24-035, and others] to the BMP's (presented in September meeting) related to silvicultural practices (planning, regeneration, residual stands, post-operations, re-entry, roads and skid trail layouts).
- Discuss whether changes related to silviculture and roads are needed in Washington's Forest Practice Rules.
 - If yes, identify what rule changes or other solutions can be implemented to address deficiencies.
 - If 'no,' resolve, as a group, that Washington's Forest Practice rules are sufficient in this area.

NOTE: Participants should send all peer reviewed science related to soil health and productivity post timber/biomass harvest sites to Rachael Jamison no later than September 1, 2011. These documents will be used to support the discussion and any modifications that are deemed necessary to the Forest Practice rules.

October 26, 2011; 4 hours

Disturbance (pests, disease, fire, conversion)

Purpose:

- Compare Washington's Forest Practice rules [WAC 222-50, Chapter 222-38 WAC, WAC 222-20 and others] to the BMP's (presented in September meeting) related to silvicultural practices (planning, regeneration, residual stands, post-operations, re-entry, roads and skid trail layouts).
- Discuss whether changes related to various disturbance situations are needed in Washington's Forest Practice Rules.
 - If yes, identify what rule changes or other solutions can be implemented to address deficiencies.
 - If 'no,' resolve, as a group, that Washington's Forest Practice rules are sufficient in this area.

NOTE: Participants should send all peer reviewed science related to insects, disease, fire, fuel reduction treatments, invasive species, and forest conversion in timber/biomass operations to Rachael Jamison no later than October 12, 2011. These documents will be used to support the discussion and any modifications that are deemed necessary to the Forest Practice rules.

November 10, 2011; 3 hours

Legislative Report Work Session

The group will be given an opportunity to review the report on progress of this group required in SHB 1422. Comments on the report will be accepted until November 27, 2011. The report will be delivered to the legislature no later than December 1, 2011. The report will likely include:

- Copy of meeting agendas and notes.

- Copy of outcomes to date.
- Pictures from field trips.
- Timeline and Strategy.
- Other items per group consensus.

If opportunities arise to present this report to the 2012 Washington State Legislature, it would be the request of DNR that this be done with numerous representatives of this group.

November 30, 2011; 4 hours

Dead Wood, Slash Disposal, and Carbon Storage

Purpose:

- Compare Washington’s Forest Practice rules [WAC 222-30-021, WAC 22-30-100, and others] to the BMP’s (presented in September meeting) related to dead wood (course and fine woody material, snags left on site) slash disposal, and carbon storage.
- Discuss whether changes related to these topics are needed in Washington’s Forest Practice Rules.
 - If yes, identify what rule changes or other solutions can be implemented to address deficiencies.
 - If ‘no,’ resolve, as a group, that Washington’s Forest Practice rules are sufficient in this area.

NOTE: Participants should send all peer reviewed science related to dead wood (course and fine woody material, snags left on site) slash disposal, and carbon storage to Rachael Jamison no later than November 15, 2011. These documents will be used to support the discussion and any modifications that are deemed necessary to the Forest Practice rules.

January 6, 2012; 4 hours

Water Quality, Riparian Zones/Unstable Slopes, and Water Infiltration

Purpose:

- Compare Washington’s Forest Practice rules [Chapter 222-22 WAC, WAC 222-30-021, Chapter 222-23 WAC, WAC 222-24-(010-015), and others] to the BMP’s (presented in September meeting) related to water quality, riparian zones (erosion, wetlands, pollution), unstable slopes and water infiltration.
- Discuss whether changes related to these topics are needed in Washington’s Forest Practice Rules.
 - If yes, identify what rule changes or other solutions can be implemented to address deficiencies.
 - If ‘no,’ resolve, as a group, that Washington’s Forest Practice rules are sufficient in this area.

NOTE: Participants should send all peer reviewed science related to water quality, riparian zones (erosion, wetlands, and pollution), unstable slopes and water infiltration to Rachael Jamison no later than December 23, 2011. These documents will be used to support the discussion and any modifications that are deemed necessary to the Forest Practice rules.

February 9, 2012; 4 hours

Wildlife, Biodiversity and Cultural Resources

Purpose:

- Compare Washington's Forest Practice rules [WAC 222-10-040, WAC 222-30-020, WAC 222-24-060, and others] to the BMP's (presented in September meeting) related to wildlife, biodiversity, and cultural resources.
- Discuss whether changes related to these topics are needed in Washington's Forest Practice Rules.
 - If yes, identify what rule changes or other solutions can be implemented to address deficiencies.
 - If 'no,' resolve, as a group, that Washington's Forest Practice rules are sufficient in this area.

NOTE: Participants should send all peer reviewed science related to wildlife, biodiversity, and cultural resources to Rachael Jamison no later than February XX, 2011. These documents will be used to support the discussion and any modifications that are deemed necessary to the Forest Practice rules.

March 8, 2012, 4 hours

Sustainable Forest Biomass Collection Discussion

Purpose:

- Based on the discussions to date, determine whether any of the following further actions are needed:
 1. Recommendation to revise/modify the Forest Practice Rules.
 2. Recommendation to develop a Board Manual for biomass collection.
 3. Recommendation that no changes are necessary.
 4. Other.

April 12, 2012; 2 hours*

FPB Strategy

*Meeting only necessary if either recommendation 1 or 2 above are arrived at by group consensus.

Purpose:

- DNR will present the group with a draft recommendation package to be presented to the Forest Practice Board for feedback.

May 8, 2012

Forest Practice Board Meeting

Purpose:

- Present to the FPB the outcome/recommendations of the workgroup.
- If it was determined that rule changes were necessary, present the FPB with the proposed rule changes and request they approve the initiation of a rule making process.