BHG Implementation Plan Attachments

List of Documents

Implementation Calendar

Research Element

Site Differentiation Element

Training Element

Field Implementation Element

Monitoring Element

Updating and Information Management Element

Guideline Implementation and Flexibility

3.9.2009

	2009	2010	2011
All	Provide training in overview of BHGs to State and County Forest staff involved in timber sales	Provide training in overview of BHGs and site differention, to DNR foresters, County Forests, cooperating consultants, tribal natural resources staff	Provide training in overview of BHGs, site differention, and field measurement tools, as available, to DNR and county foresters, cooperating consultants, tribal natural resources staff, loggers
	Develop a checklist for BHGs to incorporate into existing forms for state, county and MFL	Begin use of forms	
	Investigate options for FWM field measurement tools	Evaluate FWM field measurement tools	Continue investigation and evaluation of FWM field measurement tools
	Develop site differentiation tools, including Forest Habitat Type Group screening methods, and lists of sensitive soil map units by county		
	Develop a BHG field manual, similar to the BMPs for Water Quality field manual	Develop new sections for BHG field manual on site differention	Develop new sections for BHG field manual on FWM field measurement tools, as available
	Investigate options for integrated monitoring and collection of FWM information in State Forest CFI		
			Evaluate BHGs in light of new monitoring & research information - may occur sooner if information becomes available
	Research - develop a request for proposal (RFP) with limited available DNR funding that identifies priority research needs (nutrient poor concerns) confirmed by the Council. Implement research ASAP.	Research - continue implementing research.	Research - measure results and provide available information for guideline modification.
State and County Lands	Begin identifying opportunities for FWM harvests for sales to be sold in Spring 2010 and beyond	Timber sale contracts with FWM harvest sold in Spring 2010 and beyond include BHGs	Timber sale contracts with FWM harvest include BHGs
	Sold and pending contracts with FWM harvest can continue as is	Use pre-sale meetings and visual inspections to administer timber sale contracts with BHGs	Use pre-sale meetings and visual inspections to administer timber sale contracts with BHGs - Incorporate other tools as they become available
MFL	Approved and pending cutting notices with FWM harvests can continue as is	Approved and pending cutting notices with FWM harvests can continue as is	Cutting notices with FWM harvests approved on or after January 1, 2011 would follow BHGs.
			Use pre-sale meetings and visual inspections when approving cutting notices and reports that must follow BHGs - Incorporate other tools as they become available

*Private landowners (not under tax law) are encouraged to utilize the Biomass Harvest Guidelines as a way of sustainably managing their land.

*On all private lands, landowners have the option of implementing the Biomass Harvest Guidelines at any time rather than waiting for the steps outlined in the Implementation Plan.

3.9.2009

Implementation of Biomass Harvesting Guidelines
RESEARCH

DNR Staff Contact:
Karl Martin, Wildlife and Forestry Research Section Chief, 608 224-7138

Element Background
There is a long list of research needs that have been generated by the Forest Biomass Harvesting Guideline Committee. These include research on the impact of biomass removal on soils, water, biodiversity, nutrient cycling, forest productivity and sustainability, wildlife, etc. The top priorities identified are the impacts of fine woody debris on ecosystem sustainability and the role of fine woody debris on dry nutrient-poor sandy soils.

Feasible Options with existing resources
Reallocating forest research funding within Wisconsin DNR (possibly $110,000 per year from existing old growth research projects) can address one of the top priority questions (impacts of FWS on poor nutrient sites). To address the long list of needs identified by the Forest Biomass Committee there will need to be additional funding and staff allocated to conduct research and transfer information from ongoing studies.

Feasible Options
1) Status Quo – no reallocation of funding
2) Reallocate existing funds (possibly $110,000 per year) to address the top research priority related to biomass harvesting
3) In addition to option 1 develop a partnership to address research priorities leveraging government and nongovernment funding sources.

Options Contingent on Additional Funding or Partner Involvement/Contribution:
To address the multitude of research questions that have been identified would require a collaborative partnership between External Partners, the Wisconsin Department of Natural Resources and Academic Institutions in the Upper Great Lakes Region. This partnership would need to be able to secure external funding to address priority research activities.

Timetable:
- 2009 – Develop a Request for Proposals (RFP) to address the top BHG priority (Appendix A) using limited funding in DNR's Science Services Bureau.
- 2009 – Establish a contact person to facilitate technology transfer from the ongoing forest biomass projects in the Upper Great Lakes Region
- 2009-2012 – Solicit partners to sponsor additional biomass research needs that are not being addressed
- 2012 – Complete initial biomass research and develop a comprehensive report addressing key questions and additional research questions.

Recommended Option Comments Received:
Numerous comments were received on the research element. Primary concerns and comments were divided into 5 broad categories listed below.

- **Additional Research** – There is a need for additional research; suggestion to focus on the role of FWD on ecosystem function rather than just focusing on soil impacts; support for conducting research nutrient cycling on poor soils as proposed; research should include the effectiveness of fertilization on nutrient poor sites; need for research on yield taxes for biomass harvesting.
- **Timeline** - Concerns over the short timeline for having expected results; proposed research should move forward as soon as possible to collect the needed information; need to be science-based, but not sure of long-term impacts.
- **Research Focus** - Proposal is designed in a way to open up more harvesting on poor nutrient sites – there are more important areas that should be researched; the science should be designed to answer how much is enough to leave
- **Research Process** - Idea for an alternative research process and oversight (proposal evaluation and oversight by stakeholders)
- **Funding** – The research needs are long and require significant funding; Wisconsin's entire forest community must work together to address the identified needs.

Recommended Option and Discussion:

Option 2 is the only feasible option considering the limited availability of resources. We suggest moving forward with the highest research priority that was outlined by the BHG Advisory Committee. The attached request for proposals (RFP) would be distributed widely.

To meet the additional research needs surrounding BHG we will need to access resources of other agencies and organizations. Currently there are additional biomass projects being initiated through the Focus-on-Energy Program in Wisconsin. These include assessments of the roles of FWD and CWD on ecosystem function and biodiversity, the role of CWD on nutrient cycling, and the role of residual trees on biodiversity.

The short timeline for BHG review makes it imperative that we move quickly to initiate research on the impact of FWD on forest sustainability and nutrient cycling. Research will be designed to address the question of 'how much to leave' so it can be applicable to field operations.

Research will be administered and coordinated by DNR's Science Services Program with input and evaluation from a representative of UW-Madison's Forest and Wildlife Ecology Department, UW Stevens Point College of Forestry, and DNR's Office of Forest Science. Criteria-based evaluations of research proposals will include scientific credibility of the proposal, timeline, applicability, availability of matching funds, proven scientific credibility, and an ability to produce peer-reviewed results. Annual reports and updates will be available to stakeholders with opportunities for them to provide comments regarding the ongoing research project(s).

Appendix A

Wisconsin DNR Request for Proposals:

Quantifying the role of fine woody debris in nutrient cycling, forest productivity and sustainability, and soil conditions following whole-tree harvests on dry nutrient-poor sandy soils

The Wisconsin Department of Natural Resources Bureau of Science Services and Division of Forestry are soliciting proposals to address the environmental impacts of retaining different amounts and size classes of residual fine woody debris following timber harvests. Specific areas of interest are the role of fine woody debris 4" or smaller in diameter on nutrient cycling, forest productivity and sustainability, and soil conditions (physical properties). This research should be designed to address low quality soils (dry nutrient-poor sandy soils) that are likely to be most impacted by changes in levels of residual fine woody debris. Specific questions to be addressed are: 1) what is the threshold amount of fine woody debris that should be retained on site to maintain productivity, and 2) what are the effects of retaining smaller material (2" diameter or less) rather than 4" material? A combination of computer simulations and field experiments will likely be needed to obtain the desired results.

Funding will become available July 1, 2009 and will last for 2 years with the possibility of an extension for a third year. There is $110K available per year to address this research priority. We foresee one or possibly two projects being funded with this RFP. Proposal should include detailed methodology, expected results, applicability to Wisconsin, timeline for completion, and a detailed budget. Proposals should not exceed eight pages. Proposals are due April 15 and final decisions will be announced May 1st. A successful proposal will address the specific questions outlined above, meet the aggressive timeframe, have potential to leverage outside funding and/or ongoing research projects, outline technology transfer methods and timeframes, and provide high quality applied information. Proposals and inquiries should be directed to Karl Martin at Karl.Martin@Wisconsin.gov.

Implementation of Biomass Harvesting Guidelines
SITE DIFFERENTIATION

Staff Contact:
Eunice Padley, Forest Ecologist/ Silviculturist, 608-261-6459

Element Background
The BHGs include Guidelines 3.B, 4.B, and 5.B, which limit removals of FWM on sensitive sites (dry nutrient-poor sandy soils, shallow soils, dysic Histosols) primarily due to concerns about potential nutrient depletion and loss of site productivity. Some users may have difficulty determining whether their site is considered sensitive under the BHGs. These are potential ways in which the sites could be identified, either from existing map resources or on-site consultations.

Feasible Options with existing resources:
1. With existing staff resources, WDNR staff could provide guidance that would use Forest Habitat Type (FHT) Groups as a first check for users in determining whether their sites are on dry nutrient-poor sands. If FHT groups are S. Dry or N. Very Dry-Dry, then the user would need to look further and use soil survey maps to determine whether their site was considered a dry nutrient-poor sand. Other FHT groups would not include dry nutrient-poor sands. Further analysis could be done (requiring reallocation of existing staff resources) to determine whether it is feasible to associate FHT's with specific soil map units, i.e. we may be able to establish a 90% probability that certain individual FHT's occur on dry nutrient-poor sands.

   This tool would speed the process of determining whether a site was a dry nutrient-poor sand by rapidly identifying and eliminating richer sites from consideration. It would not finalize the determination of a site's status. Also, it would not help in identifying sites that are shallow to bedrock or dysic Histosols, and it could not be used in winter.

Options Contingent on Additional Funding or Partner Involvement/Contribution:
2. With reallocation of existing resources, WDNR GIS staff could utilize query rules already developed by NRCS and produce lists of soil survey map units by county, which users could check against soil maps in printed Soil Survey Reports or online at Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/). County-level paper maps could also be prepared by GIS staff. These products would identify soil map units that are completely or partially limited from harvest of FWM due to their sensitivity (dry nutrient-poor sands, dysic Histosols, or soils shallow to bedrock).

3. On-site consultations could be used in cases where there is disagreement or confusion about the status of a borderline dry nutrient-poor sandy site. This would require reallocation of existing staff resources, or hiring consultants. An on-site visit would include examining soil development, checking the pH, and augering deeply into the substratum to look for underlying loamy layers or carbonates that would indicate a higher nutrient status than shown by soil mapping. In cases of mapped complexes, the on-site investigation would look for evidence of the dominant soil condition within the stand. It is possible that some field staff with a soils background could be trained to make these determinations. On-site consultations are not as likely to be needed for sites shallow to bedrock or sites that are dysic Histosols.

4. Additional resources as well as a commitment from partners would be needed for NRCS to develop a tool within Web Soil Survey that would highlight soil map units that are completely or partially limited from FWM harvest. The tool would utilize the query rules already developed. A user would select a geographic area of interest, click on a tab, and display the soil map with color codes indicating the sensitive soils. A table would also be displayed, with more information about the type of limitation, and giving the acreages of map units affected.

Comments Received:

There were only a few comments about the site differentiation element, and most of them focused on concerns about lack of resources for on-site consultations. The idea of using available resources from agencies outside the DNR was proposed. One comment expressed discomfort with using soil survey maps as a tool for identifying dry nutrient-poor sandy sites. Another comment suggested that sites suitable for harvest of FWM should be identified in property-level planning, where cumulative effects associated with these harvests could be evaluated. This last suggestion was forwarded to DNR staff working on master planning for State Forests.

Recommendations and Discussion:

It is desirable to access the resources of partner organizations to assist in on-site consultation, but it is unclear at this time whether there are any groups able and willing to commit resources to this effort. DNR will continue to encourage other agencies and organizations to participate in BHG implementation. Meanwhile, DNR will take actions that can be accomplished with reallocations of existing resources.

While the soil survey maps are not a perfect tool for identifying sites with nutrient concerns, there does not appear to be a better option. Some individual judgment will be needed to assess whether a specific site is located on an inclusion, or on part of a soil complex that is not sensitive.

With reallocations of existing resources, the Department can accomplish Options 1 and 2.

1. Develop information on Forest Habitat Types Groups that can be used as a “first cut” to identify sites that could be dry nutrient-poor sands.
2. Produce a list of soil survey map units, by county, that meet the specific criteria for dry nutrient-poor sands, soils shallow to bedrock, and dysic Histosols. (Reference Appendix 2 of the Guidelines for criteria for dry nutrient-poor sands.)

Option 3, on-site consultation, will be conducted on a case-by-case basis, as there are very few resources available for this work within DNR. Partners will be sought and encouraged to provide additional resources.

The DNR will continue to work with NRCS to explore and encourage development of a Web Soil Survey tool (Option 4).

Development of the feasible options means that in the short term most users will identify sensitive sites by using soil surveys, either in printed or online form. Most foresters are sufficiently familiar with soil survey products to locate a site on a soils map, and cross reference it with a list of soil map unit codes to identify units that are listed as sensitive. Those not familiar with soil survey information may be able to utilize training materials that will describe how to access and use soil maps to make a determination as to whether a site is sensitive.

Implementation of Biomass Harvesting Guidelines
TRAINING

Staff Contact:
Eunice Padley, Forest Ecologist/ Silviculturist, 608-261-6459

Element Background
Constituents have expressed the need for training to be offered to foresters and loggers who will be implementing the BHGs.

Materials for providing training on the BHGs could be assembled from existing materials (PowerPoint shows, handouts) by staff in a relatively short time. This portion of the training would consist primarily of an introduction to the BHGs, and an overview of the scientific information and rationale that supports the guidelines. With additional resources (funding), this material could be worked into on-line presentations that would be easily accessible to a large number of constituents.

Materials for site differentiation would need to be developed, although there is a limited amount of existing material that could be repackaged as a starting point. This work could be done by existing staff in a moderate amount of time. This portion of the training would include an overview of NRCS soil survey products, including printed survey reports and maps, and Web Soil Survey. It would include more detail on the scientific background for limiting biomass harvesting on sensitive sites. It would also include a section on the use of Forest Habitat Types to screen for dry nutrient-poor sandy sites. This training ideally would include classroom and field components, and could be offered as a 1-2 day session.

Field measurement training would need to be developed, and there are very few existing simple methods to draw from. There are existing methods for research, and Forest Inventory and Analysis (FIA) fire fuels measurement, but these methods are likely too complicated for the intended users. Simplified field measurement protocols would have to be developed and tested before training materials could be created. Arriving at accepted field measurement protocols could be a time-consuming process and it may not be possible to implement this segment until 2011 or beyond. Developing these protocols would also take a significant amount of reallocation of existing staff if completed within WDNR, or additional funding if undertaken by other organizations. This portion of the training would require a field component, but until the methods are developed and tested it is uncertain how lengthy the training sessions should be, or whether a classroom component would be desirable. It is also uncertain whether field measurement training should be packaged together with BHG and site differentiation training, as not all users would need to be thoroughly familiar with field measurement protocols.

Feasible Options with Existing Resources:
1. WDNR staff provide several (3-5) training sessions during each field season via reallocation of existing staff and travel funds. The need for a field component for some parts of the training would limit the number of attendees per session to 30-50 individuals, so it would take a number of years to train all the WDNR foresters, county foresters, tribal natural resources staff, cooperating consulting foresters, and loggers. This option for training with existing resources is:

a. WDNR staff develop PowerPoint shows and written materials to provide an introduction and overview of the BHGs, site differentiation, and field measurement, and present the training session when feasible.

Options Contingent on Additional Funding or Partner Involvement/Contribution:

1. Develop additional training options with increased funding or partner involvement. Within this option, there are choices as to what materials to develop, how many sessions to provide, and the format of the training offered. This option would provide for more rapid training than is possible with existing resources.
   a. Develop an on-line training course as an introduction and overview of the BHGs, similar to that offered by Minnesota (http://www.mlep.org/onlinebiomassintro.htm). This appears to be a cost-effective option, but would require funding to develop materials in this format.
   b. Develop an on-line module in addition to the introductory training course to provide more in-depth information about the scientific background for the BHGs, i.e. what is currently known from research about impacts of biomass harvesting. Again, funding would be needed.
   c. Develop materials for presentations on site differentiation and field measurement. These presentations would be designed to be given in person, with a classroom and field component included, to persons who had already completed the on-line introductory training. An additional option would be to develop a brief on-line introduction to the classroom portions of these presentations, to shorten the time needed for in-person presentations.

2. For training that requires in-person presentations, WDNR staff could either:
   a. Develop materials and present initial training sessions; then provide materials to other entities to continue training (i.e., a “train the trainer” approach), or,
   b. Initially provide presentations together with other entities, using a co-presenting format, and then turn the training program over to them for continuation. These other entities could include UW-Extension and Basin Educators, or FISTA, or private contractors. New resources would be needed to fund these offerings.

Comments Received:

Several comments were received on the training element. Primary concerns included the timeframe for providing training to all who need it, and the lack of resources within DNR for conducting training or contracting these services. The idea of using resources from agencies and organizations outside the DNR was proposed. Additional groups in need of training were suggested. One commenter thought there were too many unknowns to proceed with training on site differentiation and field measurement methods.

Recommendations and Discussion:

It is highly desirable to access the resources of other agencies and organizations to assist in BHG training. Other groups could participate by becoming trainers, or by developing materials and tools, but it is unclear at this time whether there are any groups able and willing to commit resources to this effort. Meanwhile, DNR will take actions that can be accomplished with reallocations of existing resources.

There are some unknowns about site differentiation and field measurement, but there is also much that is known. Site differentiation topics have been explored as part of BHG development, and responses to public comments on the BHGs address them. There are a number of field

measurement methods for down woody debris; Forest Inventory and Analysis (FIA) uses one for fire fuels measurement, and there are many research publications that include measurement methods. The unknowns for implementing BHGs are determining which method is quickest and easiest for field use, adapting a method if necessary, and possibly developing tools such as a computer program to calculate results and facilitate implementation. The timetable reflects some uncertainty about how long this process may take.

Option 1, in which DNR staff would provide 3-5 training sessions during field seasons, is the only feasible option at present given the scant availability of resources.

The timetable for training would be approximately as follows:

- 2009 – BHG overview training provided by DNR to State and County Forest staff involved in timber sales. Materials would be shared with partners for their use in training.
- 2010 – BHG overview and site differentiation training provided by DNR to State and County Forest staff, DNR private foresters, cooperating consultant foresters, and tribal natural resources staff, as feasible (full training, including a field component, could be given to a maximum of about 150 persons during the field season). Materials would be shared with partners for their use in training. DNR would continue to seek partnerships with the forestry community to provide additional training opportunities so that all training needs could be met by 2011.
- 2011 – BHG overview and site differentiation training continued, provided by DNR to State and County Forest staff, DNR private foresters, cooperating consultant foresters, tribal natural resources staff, and loggers, as feasible (full training, including a field component, could be given to a maximum of about 150 persons during the field season). Materials would be shared with partners for their use in training. DNR would continue to seek partnerships with the forestry community to provide additional training opportunities so that all training needs could be met by 2011. If field measurement methods are finalized, a process would be identified to provide training to users who need these skills.

Implementation of Biomass Harvesting Guidelines
FIELD IMPLEMENTATION

DNR Staff Contact:
Bob Mather, Bureau of Forest Management Director – 608 266-1727

Element Background
The BHGs may impact field implementation of forest products harvesting operations in two specific ways. The first is the proposed timetable of when and how BHGs apply to specific forest ownership(s). The second impact involves the need to develop actual field implementation tools that can be used by foresters, loggers and landowners to measure if the BHGs are being applied according to the specific site prescription.

Feasible Options with Existing Resources:
The initial draft of this document presented at the stakeholder meeting on February 10, 2009, identified the following option:

1. With existing staff resources, WDNR staff could facilitate the following timetable for implementation on various forest ownerships.
   - DNR State Owned Lands: New timber sales sold starting in the fall 2009.
   - County Forest Lands: New timber sales sold starting in the spring 2010.
   - Private Managed Forest Law (MFL): New cutting notices approved starting in the summer 2010.
   - Private Forests – non tax law: Guidelines are available for all landowners and can be used at their discretion.

The implementation prior to 2011 on state, county and MFL lands would depend on if the harvesting of fine woody material is consistent with the landowner's objectives. If consistent, harvest prescriptive and specifications would be written consistent with the BHGs. For all of these ownerships the harvest prescription, including fine woody material, would first be developed and/or approved. Administering the timber sale would include checking the site to determine if the prescription was being implemented. Until early 2012, any enforcement action would be limited to education/warnings based on a visual inspection of the logger's harvest operations.

Based on comments received from stakeholders, the option was modified as follows:

1. With existing resources, WDNR staff could facilitate the following timetable for implementation on various forest ownerships.
   - DNR State Owned Lands: New timber sales sold starting in the spring 2010.
   - County Forest Lands: New timber sales sold starting in the spring 2010.
   - Private Managed Forest Law (MFL): New cutting notices approved starting on or after January 1, 2011.
   - Private Forests – non tax law: Guidelines are available for all landowners and can be used at their discretion.

Opportunities for harvesting fine woody material (FWM) depend on whether this type of harvest is consistent with landowner objectives. If consistent, a harvest prescription, including any harvest of FWM, would be developed and/or approved based on management objectives and screening for BHGs. The normal process of administering a timber sale includes checking the site to determine if the prescription is being implemented, and checking on the harvest of FWM as part of the prescription would be incorporated into this process. Until early 2012, any timber sale contract administration or Cutting Notice administration relative to BHGs would only include pre-sale meetings with the logger, and visual inspection during harvests.

Options Contingent on Additional Funding or Partner Involvement/Contribution:

1. The reallocation of existing and additional resources would have an impact on the proposed timetable for the various forest ownerships since this level of implementation is based on providing training to staff and other partners. It would be possible to move the private MFL implementation up to 2010 if additional training opportunities were provided to loggers, cooperating foresters and landowners.

2. Foster the development and testing of field test measurement tools to easily estimate the amount of fine woody material (FWM) on a site (i.e. visual reference cards, transects, plots). The estimated timeframe to develop and field test such tools is described in the training element. The rollout date could be 2011, depending on resources available for this effort.

Comments Received:

Comments expressed a concern for the lack of resources within DNR for developing the needed implementation tools and systems. Some comments were about the lack of sufficient lead time for making adjustments to currently planned timber sales, and that the implementation calendar should put state and county lands on the same schedule. Some comments expressed the idea that developing simplified methods for field measurement of FWM, or advanced tools for site differentiation, or completion of training, should occur before any BHG implementation.

Recommended Option:

The implementation calendar was modified based on comments received, and state and county lands were placed on the same timeline. Because of certification requirements, implementation must be phased in on certified lands as soon as implementation tools and systems can be developed, and cannot be deferred till 2012. The implementation calendar reflects the anticipated time and resource requirements for developing the needed implementation tools and systems in a stepwise fashion. The implementation plan calls for a phase of implementation to take place after each development step.

State and County Forests

The Department will begin to identify opportunities for FWM harvesting using the BHGs with State and County Forest timber sales advertised for sale in the spring of 2010. FWM sales under contract prior to spring of 2010 would continue as originally sold.

Standard timber sale contract language that reflects the BHGs will be developed for FWM harvests.

The process of BHG implementation will include screening the sale area to determine if FWM can be removed (i.e., the site is not on sensitive soils, and does not have Endangered or Threatened species), and determining whether harvesting FWM meets landowner goals. If so, then language would be added to the timber sale contract reflecting the BHGs.

Timber sale contract administration will include pre-sale meetings with the logger, and visual inspection during harvests. As field monitoring tools are developed, and training is provided to public foresters, loggers, and others, then these tools will be used to administer contracts.

MFL Lands

The Department will begin to identify opportunities for FWM harvesting using the BHGs with MFL Cutting Notice approval beginning on January 1, 2011. FWM sales established (with an approved Cutting Notice) prior to 2011 would continue as originally sold.

Standard Cutting Notice language that reflects the BHGs will be developed for FWM harvests.

The process of BHG implementation will include screening the sale area to determine if FWM can be removed (i.e., the site is not on sensitive soils, and does not have Endangered or Threatened species), and determining whether harvesting FWM meets landowner goals. If so, then language would be added to the Cutting Notice to reflect the BHGs.

MFL timber sale administration performed by the landowner or forester administering any harvest that includes the removal of FWM should include a pre-sale meeting with the logger, and visual inspection during harvests. As field monitoring tools are developed, and training is provided to public foresters, loggers, and others, then these tools will be used to administer Cutting Notices.

Implementation of Biomass Harvesting Guidelines
MONITORING

Staff Contact:
Carmen Wagner, Forestry Hydrologist, 608-266-1667

Element Background:
This element addresses options for monitoring the Biomass Harvesting Guidelines (BHGs). A monitoring system may address compliance, application, operational or effectiveness issues.

Feasible Options with Existing Resources:

1. **Timber Sale Administration Checklist**
   A checklist could be prepared to be used during timber sale close-out to confirm whether or not Biomass Harvesting Guidelines (BHGs) were followed. The checklist would be used on state, county and MFL sales. **With additional resources**, this checklist could be incorporated into WisFIRS to allow reporting. WisFIRS is a statewide public and private forest land management information technology system. The goals of WisFIRS includes integrating geospatial information and creating an IT infrastructure to provide tools for private forest land management, tracking and administration; GIS information for private forest land management; and public timber sale administration, financial tracking and stumpage rates. When completed, WisFIRS will serve DNR, county forest partners and cooperating consulting foresters. Development of WisFIRS is an on-going multi-year project.

   Advantages
   - Checklist can be developed with existing resources
   - Can be integrated into timber sale administration by 2010
   - Information collected for every biomass harvest on state, county and MFL sales

   Disadvantages
   - Costly to incorporate into WisFIRS and unlikely to occur before 2012
   - No reporting mechanism if WisFIRS component is not completed

2. **Biomass Harvest Sample on State Lands**
   This option would be modeled after a soil disturbance monitoring effort in 2006. A random sample of biomass harvests on state lands would be selected. Data would be collected by DNR forestry staff to determine if the BHGs were successfully implemented. Data collection would include application and operational issues. Sale information would be provided by the forester administering the sale.

   Advantages
   - Monitoring can be accomplished with existing resources
   - Qualitative and quantitative data can be collected
   - Results can be reported
   - Monitoring could occur as soon as 2010

   Disadvantages
   - Sample only includes state lands
   - Likely to occur once every five years with existing resources

Options Contingent on Additional Funding or Partner Involvement/Contribution:

3. Biomass Harvest Sample on All Lands

This option would be modeled after the monitoring program for Wisconsin's forestry best management practices (BMPs) for water quality. A random sample of biomass harvests would be selected. The five most common landowner categories – federal, state, county, industrial and non-industrial private – would be monitored on a rotating basis. Information would be collected by teams representing forestry stakeholders. Data collection would include application and operational issues. Sale information would be provided by the forester, logger and/or landowner. Landowner permission would be necessary for monitoring to occur.

Advantages
- Information collected for biomass harvest on five major landowner categories
- Utilizes a team approach
- Results can be reported

Disadvantages
- Development of monitoring program beyond existing resources
- Primarily qualitative data collected
- Requires landowner permission
- May be difficult to identify biomass harvests for some landowner categories
- Development of monitoring program unlikely to occur before 2012

4. Integrated Sample of State Lands

This option would be modeled after Minnesota's Forest Management Guidelines monitoring program. A random sample of state lands sales would be selected. On these sales, information would be collected about a variety of guidelines – BHGs, BMPs for Water Quality, BMPs for Invasive Species, and others. Information would be collected by a team of people with expertise in the various guidelines and BMPs. Data collection would include application and operational issues. Sale information would be provided by the forester administering the sale.

Advantages
- Allows for efficiencies in monitoring programs
- Qualitative and quantitative data can be collected
- Results can be reported

Disadvantages
- Development of monitoring program beyond existing resources
- Sample only includes state lands
- Development of monitoring program unlikely to occur before 2012

5. Integrated Sample of All Lands

This option would be modeled after Minnesota's Forest Management Guidelines monitoring program. A random sample of timber harvests would be selected from the five most common landowner categories. Landowners would be monitored on a rotating basis. On these sales, information would be collected about a variety of guidelines – BHGs, BMPs for Water Quality, BMPs for Invasive Species, and others. Information would be collected by

teams representing forestry stakeholders. Data collection would include application and operational issues. Sale information would be provided by the forester, logger and/or landowner. Landowner permission would be necessary for monitoring to occur.

Advantages
- Allows for efficiencies in monitoring programs
- Utilizes a team approach
- Qualitative and quantitative data can be collected
- Results can be reported

Disadvantages
- Development of monitoring program beyond existing resources
- Requires landowner permission
- Development of monitoring program unlikely to occur before 2012

6. Fine Woody Debris Module in the Wisconsin State Forest Continuous Forest Inventory

In 2007, the Forestry Division started the Wisconsin State Forest Continuous Forest Inventory (WisCFI). The primary purpose of the WisCFI is to collect and report on the condition of each state forest in a statistically sound manner on an annual basis. The information will be used to track the status and trends in forest extent, cover, volume, growth, mortality, removals, habitat, and overall health. Currently, the WisCFI includes data collection on coarse woody debris, but not fine woody debris (FWD). Adding a module on FWD could be used to establish baselines and track trends in FWD following harvest; however collecting statistically significant data may be cost prohibitive. Basic information is collected on over 500 permanent plots annually and more detailed information is collected on over 200 permanent plots annually. Each plot is visited once every five years.

Advantages
- Builds on existing monitoring system
- Data is collected pre- and post-harvest
- Quantitative data can be collected
- Results can be reported

Disadvantages
- Development of FWD module beyond existing resources
- Sample only includes state forests
- Development of monitoring program unlikely to occur before 2012
- Statistically significant data collection may be cost prohibitive

Summary Table

	1 – TSA Checklist	2 – BHG on State Lands	3 – BHG on All Lands	4 – Integrated State Lands	5 – Integrated All Lands	6 – WisCFI FWD Module
Implement with Existing Resources	Yes – without WisFIRS	Yes	No	No	No	No
Multiple Landowner Categories	Yes	No	Yes	No	Yes	No
Collect Qualitative Data	Yes	Yes	Yes	Yes	Yes	No
Collect Quantitative Data	No	Yes	No	Yes	Yes	Yes
Collect Pre- and Post-Harvest Data	No	No	No	No	No	Yes
Allows Reporting	Yes – with WisFIRS	Yes	Yes	Yes	Yes	Yes
Ready to Implement by 2010	Yes – without WisFIRS	Yes	No	No	No	No
Requires Significant Investment	Yes – for WisFIRS	No	Yes	Yes	Yes	Yes
Relies on Team Approach	No	No	Yes	Yes	Yes	No

Monitoring System						
Compliance	Yes	Yes	Yes	Yes	Yes	No
Application	No	Yes	Yes	Yes	Yes	No
Operational	No	Yes	Yes	Yes	Yes	No
Effectiveness	No	No	No	No	No	Yes

Note:
A compliance-based monitoring system would determine whether the BHGs were followed on a yes/no/not applicable basis.

An application-based monitoring system would determine if the BHGs were applied correctly, applied incorrectly, not applied or not applicable. An application-based monitoring system collects more detailed information that a compliance-based system.

An operational-based monitoring system would gather information on difficulties encountered during harvests. This information would be collected in a comment format.

An effectiveness-based monitoring system would determine if the BHGs are meeting their goals of protecting wildlife habitat, soil nutrients and other issues.

Comments Received:
The comments that were received can be summarized as:

- Information collection needs to be weighed against the costs of monitoring
- Monitoring should not be delayed until 2012 or later
- Monitoring should occur across landowner categories, not just on state lands
- Build off the success of BMPs for water quality monitoring efforts
- Need to recognize the value of monitoring, for both certification and for evaluating the guidelines.

Recommended Options:

1. Timber Sale Administration Checklist
   A biomass harvesting checklist can be developed to be used on state, county and MFL timber sales. This checklist would be integrated into existing forms. The Public Lands Teams and Forest Tax Law Section would assist in the development of the checklist. Completion expected by January 2010.

2. Integrated Sample of All Lands
   The development of an integrated monitoring system should be investigated for the five major landowner categories – federal, state, county, industrial and non-industrial private. This would provide cost efficiencies by visiting sales that would be monitoring for BMPs for Water Quality. Partners will be consulted as part of the evaluation of the feasibility of this program. Completion expected by January 2012.

3. Fine Woody Debris Module in Wisconsin State Forest Continuous Forest Inventory (CFI)
   The feasibility of collecting data on fine woody debris as part of the Wisconsin State Forest CFI should be evaluated. Completion expected by January 2012.

Following these recommendations would allow for the collection of baseline data on BHGs and biomass harvests starting in 2010, addressing concerns about timeliness of information. In addition, information will be available before the three-year review period of the BHGs. The remaining recommendations will require more time to investigate; however, if the programs are developed, they would be ready to implement following the three-year review of the BHGs. Two of the recommended actions would be applicable to multiple landowner categories, addressing concerns about monitoring only on state lands. All of the recommended options should provide valuable data, if implemented, for certification and guideline evaluation.

Implementation of Biomass Harvesting Guidelines
UPDATING AND INFORMATION MANAGEMENT

DNR Staff Contact:
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Element Background:
This element concerns the production of a field manual to disseminate the Biomass Harvesting Guidelines (BHGs), review of the BHGs after three years, and incorporation of the BHGs into the Forest Management Guidelines (FMGs).

Feasible Options with Existing Resources:
Currently, there is not any staff or funding resources allocated to this element.

Options Contingent on Additional Funding or Partner Involvement/Contribution:
Development of a field manual for the BHGs would require reallocation of staff time. Printing the manual would either require reallocation of existing funding or identification of new funding. Contributions from forestry partners may be able to offset unmet resource needs. Production of a field manual would facilitate dissemination of the guidelines and assist with training efforts.

A review of the BHGs that reflects new monitoring and research data would require reallocation of existing staff and funding or acquiring new staff and funding resources. The resource need would depend on whether the review is to include consultation with an advisory committee or collection of public comments.

Incorporation of the BHGs into the FMGs would require reallocation of existing staff and funding or acquiring new staff and funding resources. The level of funding needed would be affected by the media that is used to distribute new versions of the FMGs. Incorporating the BHGs into the FMGs would allow the BHGs to be under the umbrella of “generally accepted forest management practices”.

Comments Received:
The major themes of the comments received were:

- The field manual was not needed before the three-year review period
- The guidelines should be adaptable as new information becomes available
- Need to balance the guidelines against public policy concerns and the precautionary principle

Recommended Option:
As a result of these comments, we recommend developing a field manual for the BHGs to help facilitate the dissemination of the BHGs and training efforts. The Division has obtained funding for production of a field manual. The field manual will be made available as a .pdf for the Council on Forestry’s web-site. Funding at this time does not allow for printing, but users could print on demand from the web-site. As future sections of the field manual become available or are updated, the updates could be easily posted on the web-site.

The BHGs should be reviewed in three years, or sooner if new monitoring or research results are available. This will help to encourage the adaption of the guidelines with new information.

The evaluation of whether or not it is appropriate to include the BHGs in the Forest Management Guidelines should continue.

Guideline Implementation and Flexibility of the Biomass Harvesting Guidelines Division of Forestry

January 26, 2009

Voluntary Nature of Guidelines:

One concern expressed during the development of the Guidelines was whether or not the guidelines are truly voluntary. For example, there is an expectation that forest certification programs will require standards for biomass harvests, and many stakeholders are certified including state, county and private non-industrial lands in the Managed Forest Law (MFL). Forest certification is critical to maintaining Wisconsin's forest industry and provides access to markets. Likewise tax programs like the MFL offer landowners a substantial financial incentive. Public lands that are certified by the Forest Stewardship Council are currently under a Corrective Action Request (CAR), requiring development of standards for coarse woody debris retention and biomass retention in normal harvesting operations. Under certification programs, standards for biomass harvest are needed to maintain certification; due to the rigor of the Council's process, these are likely the best set of guidelines available at this point. However, there is not a requirement that these particular guidelines become the standard; individual entities may establish their own standards.

Both certification and/or enrollment in the MFL are voluntary. By participating in these voluntary, incentive-based programs, a landowner agrees to sustainably manage their lands. Questions have arisen as to how the biomass harvesting guidelines would be implemented in relation to the MFL and whether they would be mandatory. In time, these guidelines will need to be implemented when a landowner chooses to implement a biomass harvest on lands enrolled in MFL in order to practice sound forestry practices as required by the law and to maintain certification requirements.

Guideline Flexibility:

Another concern heard was the need for flexibility due to the evolving nature of the biomass harvesting industry. The Council built a degree of flexibility into the guidelines by noting that there are valid forest management practices that are exceptions, and giving examples of some such activities. Likewise the Department has occasionally had requests from constituents who wish to conduct management practices that are outside the guidelines of the Silviculture Handbook. Landowners under MFL can be granted exceptions to the Handbook based on the amount of available information, supported by scientific research, regarding the proposed practice.

There are instances where experimental techniques can be used under MFL to increase our knowledge based on management practices. Such efforts must be supervised and have relevance to policy questions, which places some limits on the types of experimentation that can be conducted under incentive programs. Techniques that have previously been shown to be ineffective or exploitative would not be encouraged. However, the MFL program does allow for experimental forestry to take place on a case by case basis. A forestry research project can be established if it is likely to yield peer reviewed and replicated research. In addition, Department foresters often utilize experimental techniques on public and private lands to learn and acquire new tools to be applied to forest management.

Implementation of the BHG as proposed will be a phased in approach on state, county and MFL lands and will rely on adaptation in each of the proposed elements. These elements include training, the development of site differentiation, field implementation including on site measurement tools, monitoring systems, research and the updating and sharing of the BHG. As with other guidelines, the Department looks to facilitate consistency in implementation of the best available information in state, county and MFL programs.