

Commenter	Section	Comment	Possible Responses
County Forests	1.1	These economic considerations are intended to be used in combination with WDNR silviculture and forest management guidelines to address integrated resource management objectives: such as endangered resources, wildlife, aesthetics and ecosystem service. " We believe the last part of this sentence is redundant, the concept is clear in the first sentence of this section.	edited as suggested
County Forests	1.1	The Wisconsin Forest Management Guidelines provide a more comprehensive overview of additional forest economics topics to <u>assist in private land management</u> . Please consider adding this language	edited as suggested
County Forests	1.2	This sentence is somewhat confusing; how can revenue from forest management be a "constraint" in achieving objectives? Please clarify or consider removing this sentence	Edited to read: In forest management, individual trees, stands, and forests each have different kinds of value. The most easily recognized is the revenue generated when timber is harvested. Activities designed to achieve many management objectives can be costly and may not be undertaken by the landowner unless there is an offsetting revenue stream. Timber revenue creates an opportunity to achieve objectives.
County Forests	1.2	This paragraph discusses even aged versus uneven aged management but there is no mention of species regeneration reliability on one management type over the other. We suggest the 2nd sentence include the following language; "This is not always the case and <u>depending on the species</u> , uneven aged stands managed in a steady state....." Please consider adding this language.	edited as suggested
County Forests	1.2	Please strike the 3rd sentence; Generally, valuing non-timber forest resources lengthens the rotation age. This is subjective and certainly does not apply to landowners who own property for hunting purposes. The language is unnecessary.	edited as suggested
County Forests	1.2	Please strike the last sentence of this paragraph; At all stages of the value chain the partner tries to maximize utilization of products based on their preferences. This sentence is confusing and somewhat misleading, the word "partner" certainly does not fit here	edited as suggested
County Forests	2.2.2	Annual revenues may include money received from selling non-timber forest products or payments for ecosystem services. which may include incentives provided to landowners who adopt practices that protect watersheds or biodiversity. Unnecessary	edited as suggested

		language, does not add clarity and is somewhat subjective as it seems to promote two areas of ecosystem services	
County Forests	2.2.4	Although it is likely not the intent, this section seems to portray the scenario; bigger trees=more value. There is language regarding the possibility of sawmill preference for smaller diameter sugar maple but both the figure and table clearly illustrate and promote higher value for larger trees. We are not sure a comparison of high value black cherry in Pennsylvania is the best use for comparison of NPV in Wisconsin silviculture. We are truly unaware of log cabin builders who utilize 36" diameter logs in cabin construction, most prefer to use smaller, easier to handle material. Please consider eliminating the language "for example log cabin builders will take logs up to 36 inches in diameter".	This was discussed at SGT in October and while it is true that most sawmills in Wisconsin will take wood up to 32-36", the sentence could be modified to indicate that it is important to understand the diameter ranges that local mills prefer and remove all references to "smaller" or "larger". Paragraph was edited.
County Forests	2.2.6	May be somewhat inconsequential, but we question the reference to "a red maple stand"	Used as an example, ad hoc decided to leave the sentence unchanged
County Forests	3	The rotation age should be based on landowner objectives and take into consideration the financial optimization as well as the ecological capacity of the forest and social objectives." Wow, that is quite a sentence; when this is referencing private forestlands, whose social objectives are being taken into consideration? This is certainly a part of public land management but the language seems a little strong when using the guidance on private forestlands. Perhaps it would be best to end the sentence earlier? The rotation age should be based on landowner objectives, and take into consideration the financial optimization as well as the ecological capacity of the forest and social objectives.	edited as suggested
County Forests	3	Please consider striking the last sentence; " An extended rotation is usually considered to maximize social benefits. " As stated in an earlier point; this is a subjective statement and makes a great deal of assumptions regarding landowners' goals and social benefits	Edited to read: An extended rotation generally does not maximize financial benefits but may reflect other landowner objectives
County Forests	4	The 1st sentence of this paragraph does not make sense to us and we do not believe it is true. In addition, once again, there is no reference to species when discussing uneven aged management. We believe this is a key component missing in this section, in both the 2nd and 3rd paragraph.	The first sentence is meant to provide a "common myth" and is clarified by the second sentence. The paragraph was reframed to be more positive. The paragraph avoids discussion of specific species because those considerations will take place in individual cover type chapters.
County	4	Please consider striking the last two sentences, they are	edited as suggested

Forests		unnecessary and certainly do not add clarity. "It is important to remember that the maximum diameter as defined in single tree selection often provides few trees in that diameter class. A stand with a maximum diameter of 24 inches may only provide one tree in that size class and the majority of trees in the 18 inch size class."	
County Forests	7	Please consider striking the last sentence. We believe the sentence is subjective and inaccurate. This sentence does not add clarity or definition to the information provided; For example for age for hunting may require frequent cuttings, while hiking or ATV riding may benefit from mature forests with larger trees	edited as suggested
County Forests	7	Indirect use refers to values that do not require human involvement. such as animal habitat, erosion control or water quality. We believe the examples should be eliminated as those listed do, in fact, require human involvement. The text will be better off without the given examples	edited as suggested
County Forests	7	Existence values are often cultural uses. or the importance of places like Sequoia National Park to simply exist, even if we may never visit. People have all different ideas of cultural uses, the example appears to limit ideas and does not provide clarity or improve understanding of the concept. Rather, it plants a particular picture in people's minds. Please consider striking this language	edited as suggested
County Forests	7	Non-timber values are difficult to quantify but are being implicitly <u>should be considered to some degree</u> in every management decision." Please consider our suggested language for this sentence.	edited as suggested
County Forests	8	This sentence states, "Land values are often low" We believe this statement is inaccurate and should be removed from the document. We suggest: "Trees that grow in the forests and the services forests provide are of great value."	First paragraph removed
County Forests	8.1	Please consider the following: "Forest landowners are the base of the economic chain. Private forestland owners may work with consulting foresters....."	edited as suggested
County Forests	8.2	We are pleased to see research results from Wisconsin's Forest Practices Study being put to good use	
County	8.4	Please consider mentioning the import use of county forest timber	edited as suggested

Forests		sale revenues to offset local tax levies	
GLTPA		<p>this document misses the mark. The chapter is supposed to be about economics. We have volumes of other documents that focus on the ecological and social benefits of forestry. To be sure, these are very important and we have no interest in seeing them diminished. However, in order for ecological and social benefits to be achievable for many forest landowners, forest value must also be maximized to meet the cost of those benefits. Overall the document appears to be geared more toward general land management guidelines that are not necessarily associated with forest management and not focused solely on economics.</p>	<p>The scope of the chapter was initially proposed to be a general overview of economic rotation ages. This was because as new cover type chapter are updated they will include specific economic discussions (the new red maple chapter is an example). Future chapters will also cover economic rotation ages so this chapter was proposed as an introduction to the terminology and pieces of data needed to calculate economic rotation ages. It was never meant to provide formulas for calculating rotation ages or discussion of other forest management topics. For instance, it was proposed to include a section on crop trees but SGT thought that discussion was more appropriate in a separate chapter or a discussion on order of removal. The scope of the chapter was always proposed to be about 15 pages</p>
GLTPA	1.2	<p>For many landowners, revenue from forest management is both a constraint and an opportunity in achieving objectives.” How can revenue from forest management be a constraint</p>	<p>Edited. See response to County Forests</p>
GLTPA	2.2.2	<p>discusses payments from non-timber products. This discussion belongs in a document about general forest management, not the only chapter in the Silvicultural Handbook about economics</p>	<p>The discussion on non-timber payments is a form of economics. The chapter is not a chapter on financial rotations, it is about economic rotations of which non-timber payments are included. In addition, this paragraph was endorsed by several members of the ad hoc team as well as members of SGT.</p>
GLTPA	1.1	<p>the very beginning of the document, “1.1 Goal of Chapter”, sends the wrong message. When I read “[t]he Wisconsin Forest Management Guidelines provide a more comprehensive overview of additional forest economics topics,” I can’t help but ask why this document has been developed. This was supposed to be an opportunity for industry to educate DNR so they could work better together. Instead readers are referred to another (apparently better) document that already exists. Why would readers, or committee members, spend their time on this chapter?</p>	<p>Not sure where this idea came from but it was never proposed to be a document for industry to educate the DNR. The document that was referred to was presented to the SGT at the first meeting in July 2014 and they still wanted to proceed with a general chapter on background information on economic rotation ages in the silviculture handbook</p>
GLTPA		<p>Was this document started from scratch with the Ad Hoc Team or was there a primary author who wrote the chapter draft? Is the Ad Hoc Team Member list a complete record of the participants in this process or are there others from the department who were involved? If so, who are those participants?</p>	<p>See Paul Delong’s response at the end of this document</p>

		Based on conversations with Ad Hoc Team members, it is my understanding that WDRN staff wrote a base document then asked members to review and make changes. These staff members were not listed as participants. If this is the case, we find it unacceptable and disingenuous that these people were not included on the list of participants. I can assure you this lack of disclosure will surely diminish the trust that has been developed between GLTPA members and the department under the leadership of the current administration.	
Michael Luedke	1.2	Please change the following sentence “ The optimum economic rotation age maximizes the net present value of the forest <u>stand and forest type being evaluated</u> ”	edited as suggested
Michael Luedke	2.1	<p>What is economic rotation? I understand the optimum economic rotation length to be the number of years in a rotation that would maximize the net present value of the stand for an indefinite number of rotations. This was commonly called the land expectation value and assumed the same forest type would be managed on the site with the same investments, expenses, etc to produce the same volumes/real values for a perpetual series of rotations. I also understand that most of the land expectation value results from the net present value of the first rotation with significantly lower net present values provided from the 2nd rotation period and beyond.</p> <p>I guess my point is seeking to clarify if the discussion in Section 2.1 is limited to NPV analysis for a single rotation period or for an indefinite number of periods.</p> <p>In addition, it should be mentioned here that NPV calculations do not always have to start from year 0 in the rotation period but could in fact begin at an intermediate year between 0 and full rotation age. And then a subsequent NPV calculation and rotation age analysis could then be made on the desired stand/forest type after the current stand is harvested and regeneration efforts/investments for the future desired stand/forest type are made.</p>	The limitation of using NPV for infinite rotations are discussed in the chapter. The chapter does explain that NPV doesn't have to start in year 0.
Michael Luedke	2.2	<p>Components of economic rotation.</p> <p><i>In previous paragraphs, the “<u>optimum</u>” economic rotation is used but in this first sentence optimum is not included. Is there a reason?</i></p>	Optimum was excluded

Michael Luedke		The title of this Table should be changed to “Comparisons of future values for a Michigan jack pine stand”. This helps discourage readers from drawing inappropriate conclusions for other forest types in Wisconsin due to the generic title of Table 1.	edited as suggested
Michael Luedke		I would like to offer a suggestion that all tables include a footnote in small type that identifies the key assumptions used to calculate the results portrayed in the tables. For example, since the discount rate has a great impact on NPV, the footnote at the bottom of Table 1 should at least show that a 4% real rate used to discount future value back to present value.	Information is in
Michael Luedke	2.2.2	In the first paragraph, the following sentence is provided: “Annual costs are the annual revenues in each year minus the costs.” ?????????	Misprint, was corrected
Michael Luedke	2.2.2	In NPV analysis, it may be reasonable and appropriate to disregard annual taxes paid by a landowner since a landowner may continue to own forestland regardless of annual property taxes or landowner choice to manage for aspen, red pine, jack pine, upland brush or other forest types. Without using annual taxes, there will still be significant differences between NPV analyses of different forest types.	Discussed at SGT in October. This is a very important consideration in financial rotations. Sentence reworded to say “High annual costs shorten the economic rotation age, decrease the total returns on the stand, and may cause the landowner to choose a less costly and less productive silvicultural alternative”
Michael Luedke	2.2.2	A forest landowner genuinely motivated to maximize timber income would select an “open” MFL enrollment option to reduce annual taxes/annual costs. Just as charging the purchase of a new deer stand, new rifle, or hunting gear against the cost of growing timber, including the \$8.54/ac/yr in this analysis is totally inappropriate. Most landowners choose to close their lands to protect their hunting experiences or desire for solitude, not for any value that benefits forest production. Importantly, the higher annual tax has a significant impact on the NPV and rotation length analysis.	Decided to leave as is. Specific rotation age calculations in each chapter will consider open vs closed. But it seems less important for the examples in the chapter
Michael Luedke		Please change the title of Table 2 to <u>NPV of a Pennsylvania black cherry tree</u> . Again this suggestion is offered to help reduce the misuse of the values offered in Table 2 to Wisconsin situations	Table was eliminated
Michael Luedke	2.2.7	At the WDNR, we generally use a real discount rate of 4%.” For what purpose? Please provide an example of where WDNR has used this in a NPV analysis in regards to forest management decisions. I’m not aware of any. Was the 4% discount rate used to develop rotation length recommendations on state owner lands;	I don’t know that any discounting was done in the master plans but since July 2014 most economic analysis in forestry are done at 3,4 and5% with 4% being the standard.

		investment in site preparation choices; etc? Did these have direct impacts on field level management actions? The statement doesn't seem believable?																									
Michael Luedke	2.2.7	Optimum economic rotation. Is this correct? I recommend a change in the title of this chart to reflect that this chart demonstrates the theory behind rotation age determinations based solely on annual growth rates and real discount rates. Clearly there are other methods to calculate optimal economic rotations	Figure is correct. It would be hypothetical for a stand with no thinnings but does include all costs and benefits of owning forests (including annual costs)																								
Michael Luedke	5	Production considerations. The review of the USFS log grading rules is helpful but such rules are not consistently or routinely used throughout Wisconsin. This section should include a paragraph that describes the practice by many Wisconsin sawmills to purchase logs using other local or specific mill developed log grading systems different from USFS rules. When forest landowners receive competing bids for stumpage based of different mill log grading systems, they are at risk of falling prey to the gamesmanship between log bidders and their differences in grading/pricing rules.	Reworded to reflect the use of Northern Hardwood Log Grading Rules published by GLTPA																								
Al Koeppel	2.2.7	<p>You are comparing a red pine stand that has four thinning's with various discount rates. We do not know when the thinning's occurred or what the value derived from each thinning was and if the value of the final harvest was included. At age 51 and 53 could you physically have 4 thinning's and a harvest? Would it make more sense to set up the table in the following manner?</p> <p>Discount Rate of 3%</p> <table border="1"> <tr> <td>Rate of Return</td> <td>?</td> <td>?</td> <td>?</td> </tr> <tr> <td>Economic Rotation Age</td> <td>100</td> <td>71</td> <td>53</td> </tr> <tr> <td>Net Present Value</td> <td>\$1614</td> <td>\$?</td> <td>\$?</td> </tr> </table> <p>Discount Rate of 6%</p> <table border="1"> <tr> <td>Rate of Return</td> <td>?</td> <td>?</td> <td>?</td> </tr> <tr> <td>Economic Rotation Age</td> <td>100</td> <td>71</td> <td>53</td> </tr> <tr> <td>Net Present Value</td> <td>\$?</td> <td>\$?</td> <td>\$?</td> </tr> </table> <p>Would we provide more information that a landowner and forester could review that would help in decision making? The current table does not tell us what the original land purchase or plantation establishment costs are. It does not inform us what the</p>	Rate of Return	?	?	?	Economic Rotation Age	100	71	53	Net Present Value	\$1614	\$?	\$?	Rate of Return	?	?	?	Economic Rotation Age	100	71	53	Net Present Value	\$?	\$?	\$?	Table revised
Rate of Return	?	?	?																								
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		volume and value per thinning is or what the value and volume of the final harvest is. By setting the tables up in this manner that information would be of less value because it would allow us to see the “bottom line”. We could quickly compare the important components of making an economic decision.	
David Mladenoff	2.2.4	Change examples such as PA black cherry, and Maine, to locally meaningful examples	Was considered but didn’t have clear Wisconsin examples. PA black cherry example eliminated.
David Mladenoff	2.2.7	How do you calculate growth here? If percent, it seems a smaller percent growth of older, much larger trees in fact adds more volume to the stand than faster percent growth of small trees. Would such a curve be different than the one shown?	Growth is value not volume
David Mladenoff	3	The rotation age should be based on landowner objectives and take into consideration the financial optimization as well as the ecological capacity of the forest and social objectives.” It isn’t clear how these are incorporated. This would seem to be important guidance for landowners	Text edited to say “The rotation age should be based on landowner objectives”
David Mladenoff	3	and the conversation on limit of tree size that is marketable. Larger trees, that is older forest, is important to have on a portion of the landscape for ecological diversity reasons. How can we encourage the development of large tree market utilization again that is beneficial both ecologically and economically? It seems the potential is there.	Incorporated into sentence on extended rotation
John Withers	8.2	the first line of item # 8.2 states that the highest cost in the forestry value chain are the costs associated with harvesting and transporting the wood. Certainly costs vary with the operation but in general it costs more to own and operate a sawmill, unless you are exempt from certain insurance and regulations as the Amish are, than it does to own and operate a skidder, chainsaw, and a log truck. I suspect it costs more to operate a pulp mill than it does to operate a processor, forwarder, and a truck. Perhaps the words highest cost should be replaced with significant cost.	edited
John Withers	8.1	Landowners should consider long and short term costs and benefits. It is no secret that landowner objectives change. This is true of both public and private ownership. Landowners, both public and private, should consider short and long term economic costs and benefits. Then they can make an informed decision on how to best meet their present needs while knowing that their needs will	edited

Steve Kariainen	<p>likely change in the future.</p> <p>Sustainable forestry is defined as being “three-dimensional”, with the dimensions consisting of economic, societal, and environmental factors. With forestry practiced from a purely environmental perspective, the economic and social values would likely be less than optimum. By the same token, forestry practiced totally from an economic standpoint would probably not provide maximum environmental or societal benefits. Therefore one can say that sustainable forestry is a compromise, or balance, of those three dimensions.</p> <p>I am very pleased to see that economics is now beginning to be considered in the development of the silviculture guidelines in Wisconsin. The reason economics is finally getting on the radar screen is because the private sector now has some representation on the Silviculture Guidance Team. However just because economics is on the radar screen, and simply because there is representation by the private sector, does not in any way suggest there is no longer a problem or that the problem will soon be solved.</p> <p>Here are some of the reasons why I don't think the problem will go away any time soon:</p> <ul style="list-style-type: none"> • Forestry practice is impacted by a growing number rules, regulations, and guidelines imposed by federal, state & local agencies, often without any consideration for economics. • While the definition of sustainable forestry is clear, the appreciation of the importance of economics to the practice of sustainable forestry is not so clear, even within the private sector. • Even if one understands and appreciates the value of economics as it relates to their particular forestry related business, that does not necessarily mean the same individual will appreciate the economic challenges faced by others with similar or related enterprises. • Although economics is critical to the practice of sustainable forestry, there is little transparency among 	
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		<p>and between the participants simply because economic data is often personal, closely-guarded information.</p> <p>I believe it will take a lot of time and effort to get a critical mass of understanding developed around the importance of economics to the practice of forestry. But it is important that we invest the time and effort, as there is tremendous potential to increase the contribution of our forest products industry to our economic well-being while also improving the forest environment and the social fabric of Wisconsin.</p>	
Ron Eckstein		<p>In general, the Wisconsin Chapter of The Wildlife Society believes the new Economics Chapter does a good job of describing forest economics and many of the economic considerations landowners may use to make land use decisions. We firmly believe, for small landowners in the MFL Program, that landowner objectives continue to be the focus of consulting foresters when they write management plans. We are aware that large landowners in the forest industry as well as TIMOS and REITS may have values that differ from the small landowner.</p>	
Ron Eckstein	8.2	<p>The Wildlife Society believes these two sentences should be removed.</p> <p>These sentences state: “Another study from Minnesota found that bids were 10% lower when guidelines were part of sale specifications (Kilgore and Blinn, 2005). Guidelines that required leaving residual trees greater than 6 inches dbh had the greatest influence on bid prices and leaving snags was least influential on bid prices.”</p> <p>We did a literature search of Michael Kilgore and reviewed several of his important publications. Kilgore does a good job of studying timber harvesting guidelines in Minnesota. His findings include many issues involving harvesting guidelines and you have summarized most of them in the draft Economics Chapter on page 14 Section 6 Access to markets: the first two sentences.</p> <p>You do cite the best summary paper: Goychuk, Denys, Michael A. Kilgore, Charles R. Blinn, Jay Coggins, and Randall K. Kolka. 2011. The Effect of Timber Harvesting Guidelines on Felling and</p>	Sentences removed

	<p>Skidding Productivity in Northern Minnesota. Forest Science 57(5): 393-406. This paper is referenced by you in the first two sentences of paragraph 2. However, the paper does not mention reserve trees as a concern. A careful review of the “Conclusions” section of this paper lists the major influence that timber sale guidelines have on the productivity of timber harvest and, consequently, bid prices.</p> <p>The Wildlife Society recognizes that reserve trees can be a nuisance when conducting cable skidding. However, with modern logging equipment, reserve trees are not a problem on most timber sales. Modern equipment is used on pine plantation and northern hardwood selective harvests as well as shelterwood harvests with few problems.</p> <p>Three DNR foresters in Vilas and Oneida Counties were consulted and they agreed that reserve trees seldom impact bids on timber sales. Many other factors influence bids including location of the sale, access to the sale, interior roads, timber volume, and timber sale size.</p> <p>In Wisconsin, the researchers conducting the large MOSS study on the NHAL State Forest do have some data on operator productivity when managing for old growth characteristics, canopy gaps, and reserve trees (Tom Steele at Kemp Station).</p> <p>The Wildlife Society recommends rewriting this paragraph by summarizing the conclusions of Goychuk et al. 2011 and removing the reference to reserve trees.</p>	
Patricia Randolph	I suggest the Wisconsin forest management revisit the policies of thinning forests in order to protect habitat for native species and ecosystems.....	Off-topic
Alex Bub (Off road vehicle)	<p>I read with interest the parts discussing forest economics and non-timber forest resources.</p> <p>I would like to see motorized recreation (off highway motorcycles and ATV) be given more access to managed forest areas to add to the economic growth of areas in Wisconsin that are struggling with business closings, reduced taxes, and poor draws for tourism.</p>	Off topic

		<p>I know that OHM can recreate on what would look like some observers as deer trails: narrow, twisty trails through the forest that can be managed for long term sustainability. Harvesting timber would not be impacted by narrow OHM trails and the quality of timber in a managed forest would not be impacted by riders on the trails.</p> <p>OHM and ATV riders bring economic activity to areas that could use their dollars spent at their gas stations, cafes, motels, hardware stores, vehicle dealerships, gift shops, campgrounds, supper clubs, and other tourist activities the riders might want to participate in.</p>	
Dan Pubanz	1.1	<p>The goal of this chapter is to review economic aspects of forest management in order to more fully integrate them with ecological and social aspects of management in Wisconsin.” Rewrite as: “The goal of this chapter is to review general economic aspects of forest management integrated with the ecological and social aspects of forest management in Wisconsin.” Economics ARE already integrated with management and the original sentence is misleading</p>	<p>Economics as it relates to the silviculture handbook. Currently economics are not considered in rotation ages and this chapter provides background to help understand economic rotation ages.</p>
Dan Pubanz		<p>I find it odd that Tables 1-3 reference data from other states. There must be Wisconsin examples you can use and that would enhance the credibility/applicability of the document</p>	<p>Table 3 was removed</p>
Dan Pubanz	2.2.4	<p>For some species, sawmills may prefer smaller sizes and harvesting at a smaller average stand diameter may maximize financial returns. For example, some mills prefer small diameter sugar maple and it may be hard for a landowner to sell a poor quality sugar maple over 24 inches in diameter.” Sawmill preferences and what is proper for the forest are two often mutually exclusive things. Witness the amount of high-grading we still have in this state. It will be hard to sell a poor log of any size. I have yet to have piles of good-quality 24” diameter logs left on the landing. This paragraph is a muddle and needs revision. At least, delete these two sentences.</p>	<p>Paragraph was reworded</p>
Dan Pubanz	2.2.4	<p>It is also important to consider the impact of the tree on the stand. For example, the removal of a single tree may create openings that affect the growth rates of other trees in the stand.” It is not</p>	<p>The sentence was meant to caution against only considering at the tree level, not recommending it.</p>

		clear what this sentence is trying to accomplish and it needs revision or deletion. The removal of the single best tree in the spot, while retaining poorer quality trees, can also dramatically degrade the long-term productivity of the stand, which is not sustainable.	
Dan Pubanz	2.2.7	This section really has little applicability to the vast majority of NIPF landowners who manage their forests. Very few, or none, purchased land to maximize their financial return, but to obtain, and manage for, a suite of attributes of which some economic return is part. Including a lengthy discussion of discount rates (6 paragraphs) and a skeletal discussion of the valuation of non-timber resources demonstrates the significant bias of this “guidance” chapter and leads one to believe that it’s simply a promo piece for industrial management of all lands.	Chapter is aimed at all landowners, not just NIPF landowners
Dan Pubanz	3	“If a tree has reached financial maturity, carrying it until the next entry causes a loss in value due to discount rates and risk of it losing value.” This is a misleading sentence and solely depends on the management goals of the landowner. Financial maturity has a wide variety of definitions depending on species, product, objective. There may, or may not, be a loss of “value” over time depending on one’s analysis, especially if, as with many NIPFs, the discount rate is very low. Again, these types of sentences lead one to believe that there is an underlying motive at work in designing this “guidance”.	Accurate when referring to financial maturity. Other objectives are considered under economic maturity.
Dan Pubanz	4	Long run steady returns insure a sustainable forest industry in Wisconsin.” Pretty clear who wrote this sentence. Revise to: “Long run sustainable forest management insures a sustainable forest industry in Wisconsin.”	Sentence removed
Dan Pubanz	7	To make this a credible exercise in providing guidance on economic valuations in forestry, this section needs to be significantly expanded. To not do so, demonstrates the inherent bias in this document. Add the following from the FMG (page 9-3), in addition to a more detailed discussion in this section: <i>There are many benefits from owning and managing forests. Stocks and bonds are usually purchased for the sole purpose of making money, and their financial performance is judged on that basis alone. But forest landowners benefit from a wide array of non-</i>	Expanding this section is outside the scope of the chapter. Additional information on non-timber valuations is available in other publications.

		<i>timber good and services: recreational enjoyment, aesthetics, wildlife and water quality, to name a few. Some of these are traded in the marketplace, for example income from leasing hunting rights, but most are not and there is no easy way to determine their value to the landowner. These non-market benefits can have significant value though, as evidenced by the prices paid for forestland. Investment analysis that focuses only on costs and returns from timber production will ignore important non-market benefits, and will provide an incomplete measure of total investment performance.</i>	
Dan Pubanz	8	Forest economics are important in forest management because forests are an economic asset.” Let’s not let the bias always intrude. Forests may be an economic, ecological, or social asset. Or all 3 together. Revise the sentence to demonstrate balance.	Sentence removed
Dan Pubanz	8	and to continue forestry in the future we need to continue maximizing long-run returns...” Maximizing returns without constraint leads to problems. Revise to “...and to continue forestry in the future we need to maintain economically-viable and ecologically-sustainable returns...”	Edited as suggested
Dan Pubanz	8.2-8.4	These sections seem oddly out of place in a guidance document and seem to be mostly puff pieces	Section was edited to reflect the role of forest economics in the value chain
Dan Pubanz	8.2	The study also found that skidding productivity was improved by increases in the number and size of skid trails and landings and the shape of the tract. Another study from Minnesota found that bids were 10% lower when guidelines were part of sale specifications (Kilgore and Blinn, 2005).” Are you seriously going to put this into a Silviculture Handbook that is supposed to be addressing sustainable forest management? Clearly, if we skid everywhere and have large numerous landings, logging productivity will increase. And if we exclude guidelines, that’s economically better? Delete these two sentences and hope everyone forgets you put them in there.	Sentence edited

Commenter	Section	Comment	Response
WWOA-Paul Kienitz		WWOA believes this chapter should be placed as an appendix to the Silviculture Handbook rather than included as a new chapter.	SGT decided to include this as a specific chapter in 2014.

WWOA-Paul Kienitz	1.1	Sustainable forest management is key principle to WWOA. Please add figure 9-1 from Wisconsin FMGs. Also add the clarifying statement found adjacent to 9-1 “Not all management that is financial attractive is sustainable and not all practices that maximize forest growth are necessarily good financial investments.”	The first part of the statement was added to the document. There are no figures in the goal of the chapter section.
WWOA-Paul Kienitz	2.2.4	Just below figure 1, the paragraph that mentions what a specific mill may or may not want is confusing and distracts from more important points. We request that you drop the first four sentences or replace with these points: Manage the forest to improve growth, vigor , quality and diversity. Each wood using industry has preferences and specifications. At some point trees can lose value if they decrease in quality or exceed the mills maximum size requirements.	Edited as suggested
WWOA-Paul Kienitz	2.2.4	Please replace the sentence: “It is also important to consider the impact of the tree on the stand. For example, the removal of a single tree may create openings that affect the growth rates of other trees in the stand.” With “there is a very important difference between stand economics and tree economics. Decisions about the economics of specific trees without considering the context of the quality and potential of surrounding trees can quickly result in degrading the stand, this is neither sustainable nor good economics.	The message is the same but the ad hoc team preferred the original language.
WWOA-Paul Kienitz	7	This section is very important it is rather brief and gives limited information of how to calculate or incorporate values for things other than boards or cords. Please replace the first three sentences of this section with the following taken from the FMG “There are many benefits from owning and managing forests. Stocks and bonds are usually purchased for the sole purpose of making money, and their financial performance is judged on that basis alone. But forests are more than mere collections of trees, and landowners benefit from a wide array of non-timber goods and services like berries and mushrooms, recreational enjoyment, aesthetics, water quality, and wildlife. Some of these are traded in the marketplace, for example income from leasing hunting rights, but most are not, and there is no easy way to determine their value to the landowner. These non-market benefits can have significant value though, as evidenced by the prices paid for	Information on how to calculate non timber benefits is outside the scope of this chapter but the section was edited to include the suggested paragraph.

		forestland. Even land that is a long distance from a population center and has no unusual attractions, such as lakes or streams, will typically be bought and sold for much more than its value for timber production alone. Investment analysis that focuses only on costs and returns from timber production will ignore important non-market benefits, and will provide an incomplete measure of total investment performance.”	
WVOA-Paul Kienitz	8	Please delete this section. It doesn't belong in this “chapter”. The silviculture handbook is not a place to advocate for a position or state that one thing is more important than another. The first sentence states “forests are an economic asset” which is only one of many ways you can view a forest.	Section 8 was reworked to focus on the value chain and the first sentence was removed.
Randy Williams			Randy appears to have commented on an earlier draft that did not go out for public comment
WDNR Silviculturists	1.1	Need to clarify economic vs financial	Clarifying statement added
WDNR Silviculturists	1.1	Should indicate that FMG is a specific publication.	Citation added (and additional citations added as suggested throughout document)
WDNR Silviculturists	1.2	How is income a restraint? This statement could be clarified to make this more self-evident.	Statement was clarified
WDNR Silviculturists	1.2	Non-timber forest resource/products also refers to products collected /sold such as boughs, cones, seeds and other products. This tends to be another topic on its own but also important in some localities of WI. But I can't suggest another term to use??	Technically it is ecosystem service valuation but it seemed too technical for this chapter so we decided to discuss it in terms of non timber forest resources
WDNR Silviculturists	1.2	Exclude sentence on valuing non-timber resources excludes rotation	Sentence removed
WDNR Silviculturists	1.2	Section 8, While this is true, it will be of little utility in the Silviculture Handbook. The Silviculture handbook is not the place for advocacy but rather the place for concepts and tools which are useful in management. Including advocacy in the Silviculture Handbook opens the door for other issues which are best discussed in different venues	Section 8 was reworked to focus on forest economics in the forestry value chain
WDNR Silviculturists	1.2	Change”adding non timber benefits may lengthen or shorten a rotation” to “Adding non-timber benefits may more accurately reflect landowner objectives, especially when the objectives are	Sentence changed

		not easily quantified”	
WDNR Silviculturists	2.1	Optimal economic rotation vs economic rotation. I think for simplicity sake we can use terms like optimal in the definition, but for titles just use “economic rotation” and as long as we define the term it will be adequate.	Optimal was removed from the chapter. It is referred to as economic rotation
WDNR Silviculturists	2.2.1	Add current stand conditions to “Site preparation and reforestation costs vary by location, prior stand history, landowner preferences, desired future stand objectives and budget.”	Sentence changed
WDNR Silviculturists	2.2.3	Add pulpwood to first sentence	Sentence changed
WDNR Silviculturists	2.2.4	Mills have operational preferences but does this equate into a difference in return for landowners during a timber sale? This example is related to defect not preference. A different example based on quality and price may paint a better picture.	Section edited
WDNR Silviculturists	2.2.4	Change “it is important to consider the impact of the tree on the stand” to “. It is also important to consider the impact of harvesting an individual tree on the stand-level management objectives”	Sentence changed
WDNR Silviculturists	2.2.4	Replace “For example, the removal of a single tree may create openings that affect the growth rates of other trees in the stand” with “While individual tree rates of return may be a consideration, this information needs to be evaluated in the context of stand-level silvicultural objectives, such as basal area targets or rotation ages.”	Sentence changed to read “While individual tree rates of return may be a consideration, this information needs to be evaluated in the context of stand-level management objectives.”
WDNR Silviculturists	3	Remove “If a tree has reached financial maturity, carrying it until the next entry causes a loss in value due to discount rates and risk of it losing value”. It is Not relevant to discussion here and would require more discussion to flesh out tree vs stand level considerations.	Sentence left as is. It is accurate when discussing a single tree and the warning to consider the impact on the stand has been well recorded throughout the document.
WDNR Silviculturists	3	Change “An extended rotation is usually considered to maximize social benefits. “ to include ecological	Sentence edited to say “An extended rotation generally does not maximize financial benefits but may reflect other landowner objectives”
WDNR Silviculturists	4	“long run steady returns insure a sustainable forest industry in Wisconsin” Is this related to context (i.e. stand, property,	Sentence clarified.

		landscape, etc.)? To distinguish the importance of steady economic returns in even and uneven-aged management, discuss the scale difference here	
WDNR Silviculturists	5	“Log and lumber grades are as important as volume in the economics of producing sawlogs”. Good place to distinguish between conifer and hardwood markets in this regard. The difference is pronounced in WI.	Clarification added later in the section
WDNR Silviculturists		Change “It is important to manage for quality and quantity but when setting up a timber sale it helps to understand what the local markets are currently accepting.” To “It is also important to manage for quality and quantity but to achieve this goal it helps to understand what the local markets are currently accepting. “and move “it is important to manage for short and long term markets”. To the first sentence in the paragraph	Edited as suggested
WDNR Silviculturists	6	Change price of fuel to transportation costs	Edited as suggested
WDNR Silviculturists	6	“Optimizing efficiencies in the woods will lower costs and increases the returns on the forestry investment’ It will lower costs but will it necessarily increase returns for landowners?	Chapter is not just for landowners.
WDNR Silviculturists	6	Change “Access within the property helps increase the return on the forest” to “Access within the property helps increase the timber sale marketability”	Edited as suggested
WDNR Silviculturists	6	“Access can also be a seasonal issue.” Add frozen ground to the list.	Added
WDNR Silviculturists	7	Change “For instance a landowner that enjoys hunting on their land may receive an additional benefit of \$100/year” to “a landowner that enjoys hunting on their land may value the benefit at \$100/year”	Edited as suggested
WDNR Silviculturists	8	If you decide to incorporate this section in the chapter, recognize that you have opened the Handbook to issue advocacy. The Handbook is best thought of as a reference for management. So far it has avoided issue advocacy by sticking to how something is incorporated into management. Example: the Handbook does not delve into why reserve trees are important in Chapter 24, rather it explains how to incorporate them into management when called for in a plan. This section (8) breaks that barrier and opens the	Section edited to focus on the forestry value chain and the sentences suggesting “importance” were removed.

	<p>Handbook to other issues. Should we have a section elsewhere on the importance of landowner objectives, etc.? Including sections which tell the landowner what to think are more dangerous than the authors realize. To make this section more effective, it should be used elsewhere where it would be more effective. No one will look up this section as a part of management. They may however read this in a white paper, etc. I do not disagree with the intent however the venue is wrong.</p>	
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Questions on process (response from Paul DeLong)

The process we used for the economics chapter was consistent with the process that we use for all chapters in the Silviculture Handbook.

1. We followed the SGT Model that was presented to the Council on Forestry at the inception of SGT. The bottom half of the model refers to chapter review and development.
2. There were some modifications to the Ad Hoc Team representation since this chapter focused on economics. Most notably, the lead of the Ad Hoc was Julie Ballweg, our forest economist, rather than one of the silviculturists.
3. Julie was the primary author, working closely with the Ad Hoc Team. The Ad Hoc Team helped develop the outline of the chapter, the content of the chapter, examples to illustrate concepts in the chapter, and ultimately reviewed and commented on the chapter content. There were no department authors not listed in the document.
4. Ad Hoc committee members were invited to help draft parts of the chapter and at least one did so. We find that most often stakeholders defer to the department to write the initial draft that can then be reacted to. When others have stepped forward – such as an industry member of SGT that wrote a significant part of the recently modified red maple chapter – we welcome their direct involvement in drafting.
5. Per the SGT Model, Julie provided regular updates to SGT, starting in October 2014 and continuing through October 2015, for SGT to review progress of the Ad Hoc Team and provide guidance and direction. This occurred at five different meetings of SGT. After each meeting, Julie reported back to the Ad Hoc Team with issues and concerns raised by SGT for the Ad Hoc Team to address in the chapter content.
6. The chapter went out for public comment after final review and concurrence with the draft by both the Ad Hoc Team and SGT.
7. Involvement of other DNR staff (beyond the Ad Hoc members) occurred at SGT meetings (which includes DNR staff) and through the standard DNR process for soliciting internal review for any DNR handbooks. This process occurred concurrently with public review; in other words, DNR staff involved with the SGT received it at the same time as externals.